Ministry of
Transportation and
Communications

Ontario

MI-115

REPORT FOR

AGGREGATE AND SOIL

REFERENCE SAMPLES

1.87, 2.87, 3.87, 4.87

5.87 AND 6.87

MATERIALS INFORMATION

ENGINEERING MATERIALS OFFICE

Ontario
Ministry of Transportation
Ministère des Transports

February 1988

TO: Participants in Correlation Programme.

SUBJECT: Aggregate and Soils Reference Sample #'s 1.87, 2.87, 3.87, 4.87, 5.87 and 6.87.

GENTLEMEN:

Enclosed is your copy of the Final Report on the test results of Aggregate and Soil Reference Sample #'s 1.87, 2.87, 3.87, 4.87, 5.87 and 6.87.

These data include a table of results for your laboratory and a set of scatter diagrams. Your laboratory number appears at the top of the table of results.

Yours truly,

Ian G. Bullen

Ian G. Bullen,
Laboratory Operations Supervisor,
Soils and Aggregates Section,
Engineering Materials Office.

NOTES ON DATA PRESENTATION

1. TABLE OF TEST RESULTS

Each table of results identifies the laboratory by number and compares the laboratory's data with the averages obtained after statistical analysis of the data received from all laboratories. Ratings are assigned (according to the scale below) indicating how far the laboratory's data deviates from the averages.

a. Column 1 shows the test number as designated in the MTO Laboratory Testing Manual and the individual test segments.

b. Columns 2 & 3 show the data submitted by the laboratory. A **"NT"** in either one of these columns indicates that valid data was not supplied by the laboratory. When valid data exists for only one of the samples in a pair it is excluded from the statistical analysis and **"*"** means the measurement was rejected as an **outlier.**

c. Columns 4 & 5 show the mean test data for the pair of samples for all laboratories reporting results.

d. Columns 6 & 7 show the **Standardized Deviate** for each measurement. The standardized deviate is a measure of how close an actual test result is to the mean for all similiar test results. It is obtained by subtracting the actual test result (X_1) from the mean ($\bar{X}$), and dividing by the standard deviation (s). A negative sign indicates the test result is smaller than the mean and no sign means the test result is larger than the mean.

e. Columns 8 & 9 list the **Laboratory Ratings**, which, in effect are similiar to the standardized deviate but in a simpler numerical form.

Rating 5 - within 1 standard deviation from $\bar{X}$.
Rating 4 - within 1½ standard deviations from $\bar{X}$.
Rating 3 - within 2 standard deviations from $\bar{X}$.
Rating 2 - within 2½ standard deviations from $\bar{X}$.
Rating 1 - within 3 standard deviations from $\bar{X}$.
Rating 0 - 3 or more standard deviations from $\bar{X}$.

As in section 1d, a negative sign indicates the test result is smaller than the mean and no sign means the test result is larger than the mean.

2. **SCATTER DIAGRAMS**

The points on these diagrams are designated by letters and symbols - each representing a laboratory. The points are located by plotting the value obtained for the first (odd numbered) sample on the horizontal axis against the value obtained for the second (even numbered) sample on the vertical axis. If the results from two or more laboratories happen to intersect at the same point, the symbols & and ? are used. A * represents a point which plots outside the chosen scale. The scale is chosen, wherever possible, to give the most informative display of the plotted points. If a point is outside the chosen scale it does not necessarily mean that it is outside the limits noted in 1e.

The horizontal and vertical dashed lines forming the cross on the plot represent the median values for the two samples. The data below the scatter diagram consists of the mean, median, standard deviation and standard error of the mean for both samples.

NOTE

As data is obtained for additional pairs of samples, a graphical representation will be made of the laboratory ratings. This will give, at a glance, a picture of the laboratory's performance and will indicate error trends. These graphs will be included with future reports.

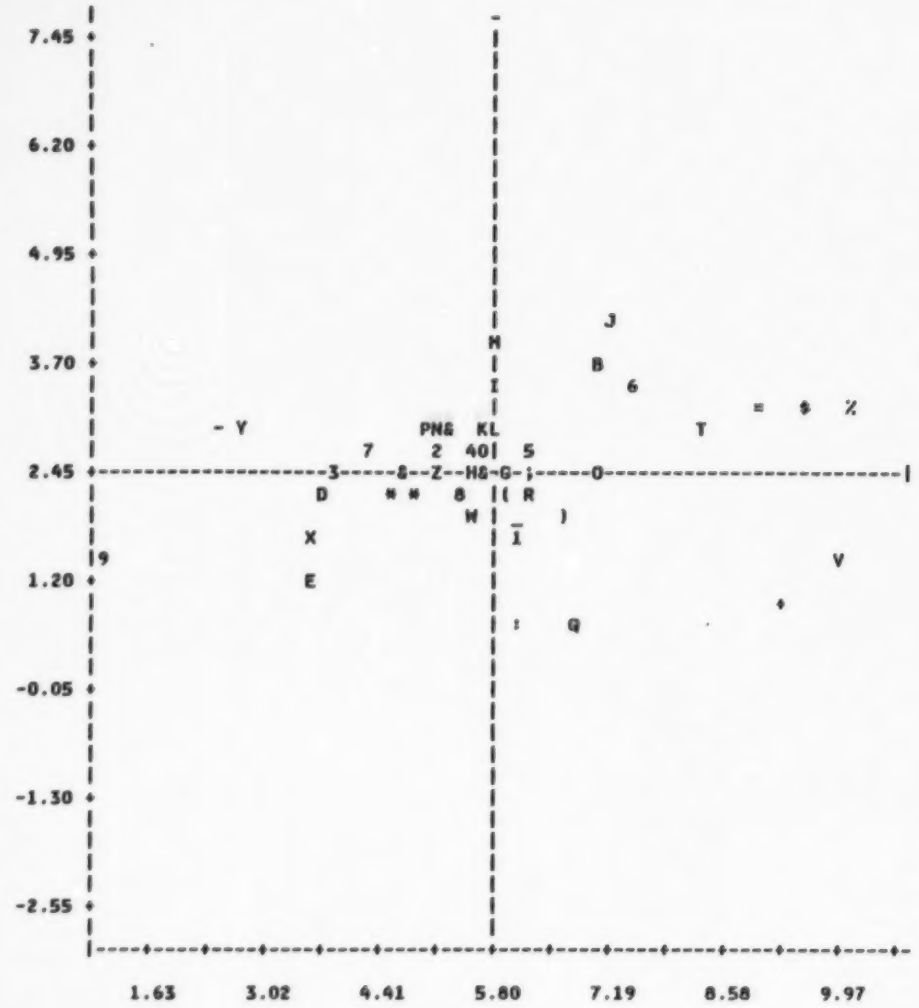
For further details on the correlation programs, please refer to the following reports:

EM-30: "Interlaboratory Study of the Precision of Some Aggregate Tests - Interim Report", by C.A. Rogers & Lise Manchester; May, 1979.

EM-33: "The Development of an Interlaboratory Testing Program for Construction Aggregates", by Lise Manchester; December, 1979.

EM-47: "Interlaboratory Reference Sample Programs for Asphalt, Concrete and Soil Tests", by B. Chojnacki, C.A. Rogers and J.I. McDougall; May, 1981.

TEST 2: PERCENT RETAINED ON 19 MM SIEVE (COARSE AGGREGATE)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.556 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



LEGEND

LAB. NO. 1	A
LAB. NO. 2	B
LAB. NO. 4	D
LAB. NO. 5	E
LAB. NO. 6	F
LAB. NO. 62	2
LAB. NO. 14	K
LAB. NO. 16	M
LAB. NO. 23	S
LAB. NO. 27	T
LAB. NO. 38	U
LAB. NO. 50	V
LAB. NO. 53	W
LAB. NO. 57	X
LAB. NO. 59	Y
LAB. NO. 60	Z
LAB. NO. 61	1
LAB. NO. 64	3
LAB. NO. 66	4
LAB. NO. 67	5
LAB. NO. 69	6
LAB. NO. 71	7
LAB. NO. 72	8
LAB. NO. 80	9
LAB. NO. 81	0
LAB. NO. 82	:
LAB. NO. 83	$
LAB. NO. 84	=
LAB. NO. 85	)
LAB. NO. 86	(
LAB. NO. 87	%
LAB. NO. 88	+
LAB. NO. 89	=
LAB. NO. 90	-
LAB. NO. 91	_
LAB. NO. 92	;
LAB. NO. 93	*
LAB. NO. 94	*
LAB. NO. 95	*
LAB. NO. 7	G
LAB. NO. 3	C
LAB. NO. 9	H
LAB. NO. 10	I
LAB. NO. 11	J

LEGEND

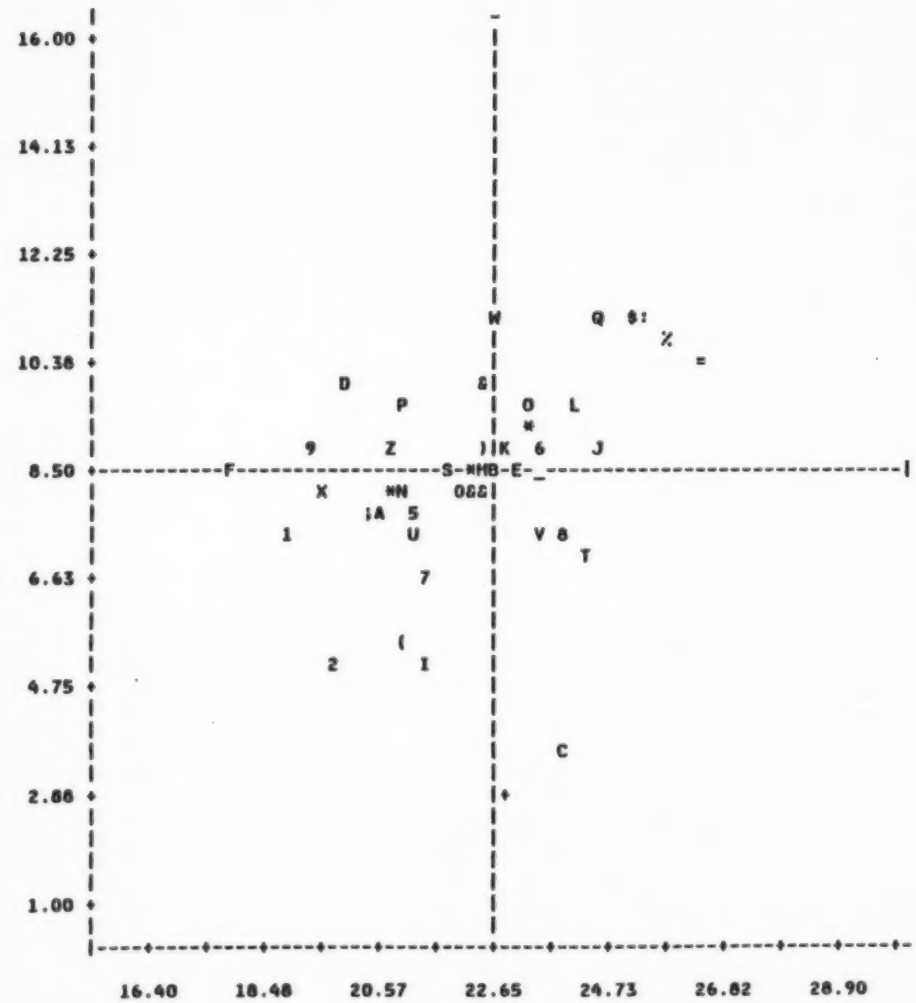
LAB. NO. 15	L
LAB. NO. 18	N
LAB. NO. 19	O
LAB. NO. 20	P
LAB. NO. 21	Q
LAB. NO. 22	R

	MATERIAL 1	MATERIAL 2
MEAN	5.930	2.482
MEDIAN	5.800	2.450
STANDARD DEVIATION	1.824	0.694
STANDARD ERROR OF THE MEAN	0.258	0.098

NO OF POINTS IN EACH QUADRANT

NE	11
SE	9
NW	22
SW	8

TEST 3: PERCENT RETAINED ON 16 MM SIEVE (COARSE AGGREGATE)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.833 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



LEGEND

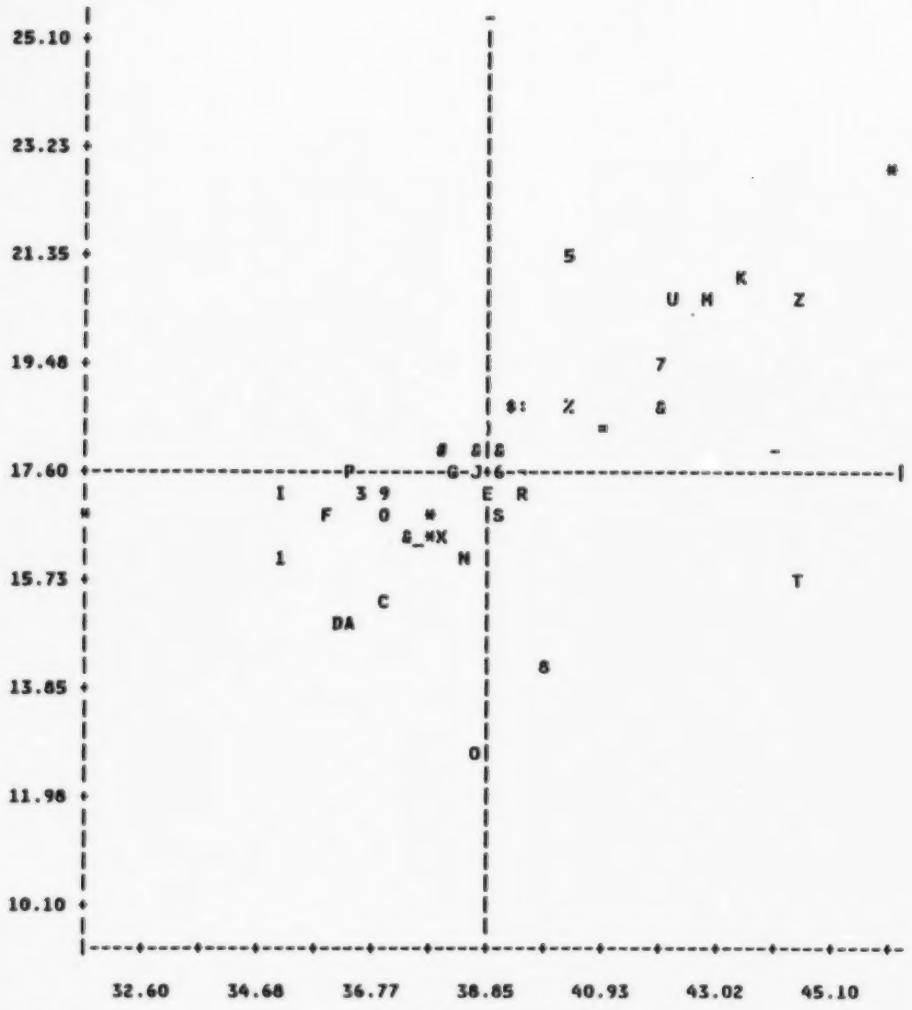
LAB. NO. 1 = A	LAB. NO. 19 = O
LAB. NO. 2 = B	LAB. NO. 20 = P
LAB. NO. 4 = D	LAB. NO. 21 = Q
LAB. NO. 5 = E	LAB. NO. 22 = R
LAB. NO. 6 = F	
LAB. NO. 62 = 2	
LAB. NO. 14 = K	
LAB. NO. 16 = M	
LAB. NO. 23 = S	
LAB. NO. 27 = T	
LAB. NO. 38 = U	
LAB. NO. 50 = V	
LAB. NO. 53 = W	
LAB. NO. 57 = X	
LAB. NO. 59 = Y	
LAB. NO. 60 = Z	
LAB. NO. 61 = 1	
LAB. NO. 64 = 3	
LAB. NO. 66 = 4	
LAB. NO. 67 = 5	
LAB. NO. 69 = 6	
LAB. NO. 71 = 7	
LAB. NO. 72 = 8	
LAB. NO. 80 = 9	
LAB. NO. 81 = 0	
LAB. NO. 82 = :	
LAB. NO. 83 = $	
LAB. NO. 85 =)	
LAB. NO. 86 = (	
LAB. NO. 87 = %	
LAB. NO. 88 = +	
LAB. NO. 89 = =	
LAB. NO. 90 = -	
LAB. NO. 91 = _	
LAB. NO. 92 = '	
LAB. NO. 93 = "	
LAB. NO. 94 = *	
LAB. NO. 95 = #	
LAB. NO. 3 = C	
LAB. NO. 9 = H	
LAB. NO. 10 = I	
LAB. NO. 11 = J	
LAB. NO. 15 = L	
LAB. NO. 18 = N	

	MATERIAL 1	MATERIAL 2
MEAN	22.498	8.348
MEDIAN	22.650	8.500
STANDARD DEVIATION	1.844	1.328
STANDARD ERROR OF THE MEAN	0.266	0.192

NO OF POINTS IN EACH QUADRANT

NE =	13
SE =	5
NW =	13
SW =	17

TEST 4: PERCENT RETAINED ON 13.2 MM SIEVE (COARSE AGGREGATE)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.833 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



LEGEND

LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 62 = 2
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 23 = S
LAB. NO. 27 = T
LAB. NO. 38 = U
LAB. NO. 50 = V
LAB. NO. 53 = W
LAB. NO. 57 = X
LAB. NO. 59 = Y
LAB. NO. 60 = Z
LAB. NO. 61 = 1
LAB. NO. 64 = 3
LAB. NO. 66 = 4
LAB. NO. 67 = 5
LAB. NO. 69 = 6
LAB. NO. 71 = 7
LAB. NO. 72 = 8
LAB. NO. 80 = 9
LAB. NO. 81 = 0
LAB. NO. 82 = :
LAB. NO. 83 = $
LAB. NO. 84 = ¬
LAB. NO. 85 =)
LAB. NO. 86 = (
LAB. NO. 87 = %
LAB. NO. 88 = +
LAB. NO. 89 = =
LAB. NO. 90 = -
LAB. NO. 91 = _
LAB. NO. 92 = ;
LAB. NO. 93 = *
LAB. NO. 94 = *
LAB. NO. 95 = *
LAB. NO. 7 = G
LAB. NO. 3 = C
LAB. NO. 9 = H
LAB. NO. 10 = I
LAB. NO. 11 = J

LEGEND

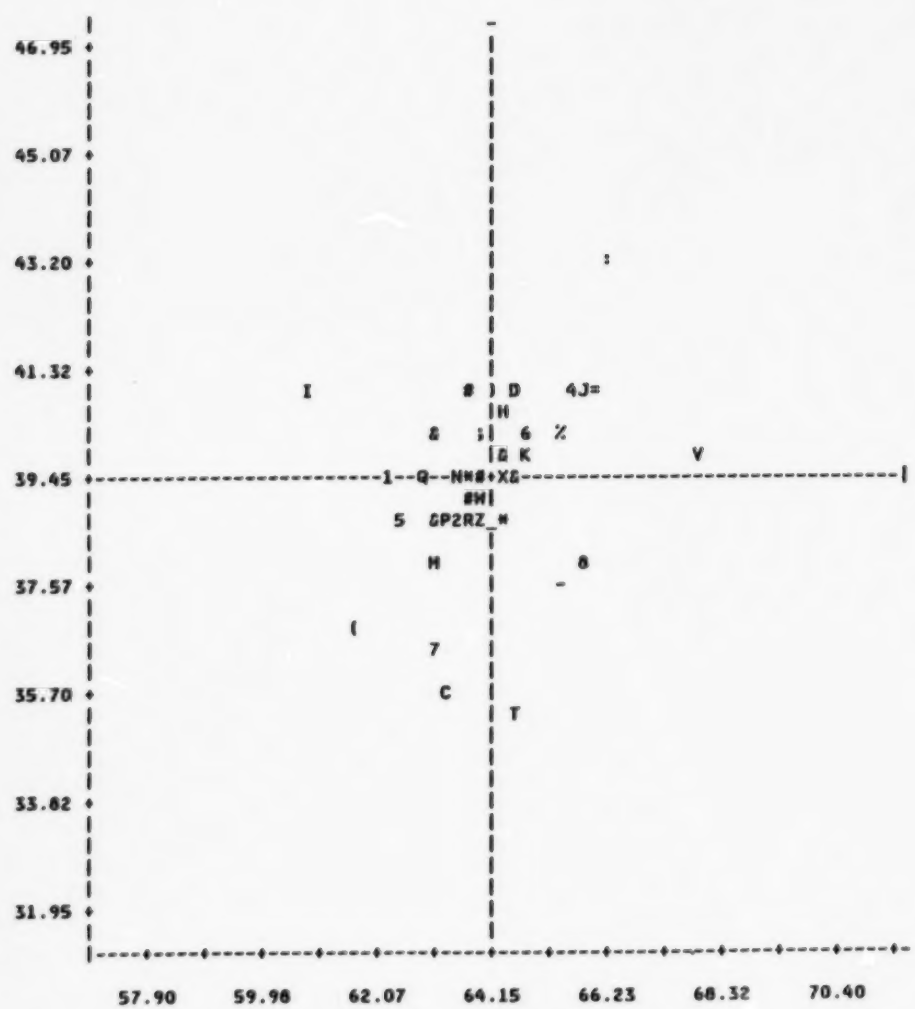
LAB. NO. 15 = L
LAB. NO. 18 = N
LAB. NO. 19 = O
LAB. NO. 20 = P
LAB. NO. 21 = Q
LAB. NO. 22 = R

	MATERIAL 1	MATERIAL 2
MEAN	39.132	17.626
MEDIAN	38.850	17.600
STANDARD DEVIATION	2.388	1.453
STANDARD ERROR OF THE MEAN	0.338	0.205

NO OF POINTS IN EACH QUADRANT

NE = 17
SE = 4
NW = 9
SW = 18

TEST 5: PERCENT RETAINED ON 9.5 MM SIEVE (COARSE AGGREGATE)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.833 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



	MATERIAL 1	MATERIAL 2
MEAN	64.252	39.392
MEDIAN	64.150	39.450
STANDARD DEVIATION	0.971	0.850
STANDARD ERROR OF THE MEAN	0.137	0.120

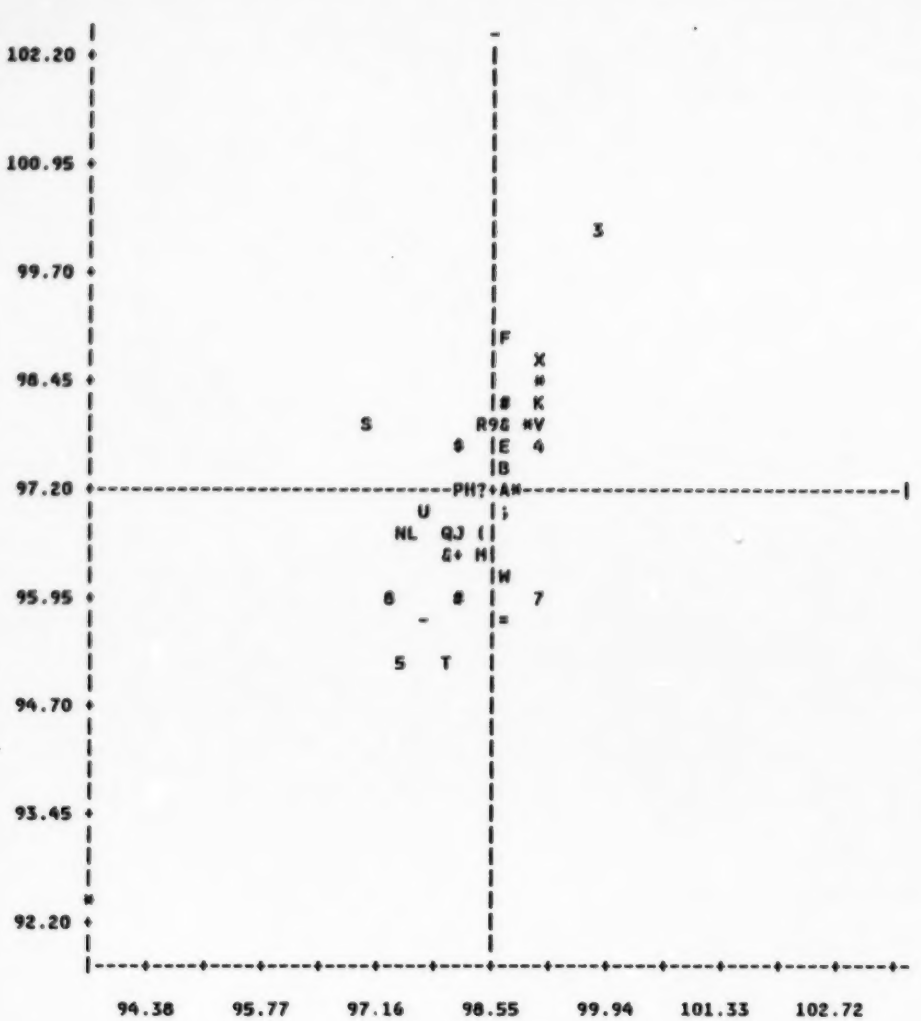
LEGEND

LAB. NO. 1 = A	LAB. NO. 15 = L
LAB. NO. 2 = B	LAB. NO. 18 = N
LAB. NO. 4 = D	LAB. NO. 19 = O
LAB. NO. 5 = E	LAB. NO. 20 = P
LAB. NO. 6 = F	LAB. NO. 21 = Q
LAB. NO. 62 = 2	LAB. NO. 22 = R
LAB. NO. 14 = K	
LAB. NO. 16 = M	
LAB. NO. 23 = S	
LAB. NO. 27 = T	
LAB. NO. 38 = U	
LAB. NO. 50 = V	
LAB. NO. 53 = W	
LAB. NO. 57 = X	
LAB. NO. 59 = Y	
LAB. NO. 60 = Z	
LAB. NO. 61 = 1	
LAB. NO. 64 = 3	
LAB. NO. 66 = 4	
LAB. NO. 67 = 5	
LAB. NO. 69 = 6	
LAB. NO. 71 = 7	
LAB. NO. 72 = 8	
LAB. NO. 80 = 9	
LAB. NO. 81 = 0	
LAB. NO. 82 = :	
LAB. NO. 83 = $	
LAB. NO. 84 = =	
LAB. NO. 85 =)	
LAB. NO. 86 = (	
LAB. NO. 87 = %	
LAB. NO. 88 = +	
LAB. NO. 89 = =	
LAB. NO. 90 = -	
LAB. NO. 91 = _	
LAB. NO. 92 = ;	
LAB. NO. 93 = *	
LAB. NO. 94 = "	
LAB. NO. 95 = '	
LAB. NO. 7 = G	
LAB. NO. 3 = C	
LAB. NO. 9 = H	
LAB. NO. 10 = I	
LAB. NO. 11 = J	

NO OF POINTS IN EACH QUADRANT

NE =	15
SE =	4
NW =	15
SW =	16

TEST 6: PERCENT RETAINED ON 4.75 MM SIEVE (COARSE AGGREGATE)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.556 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



LEGEND

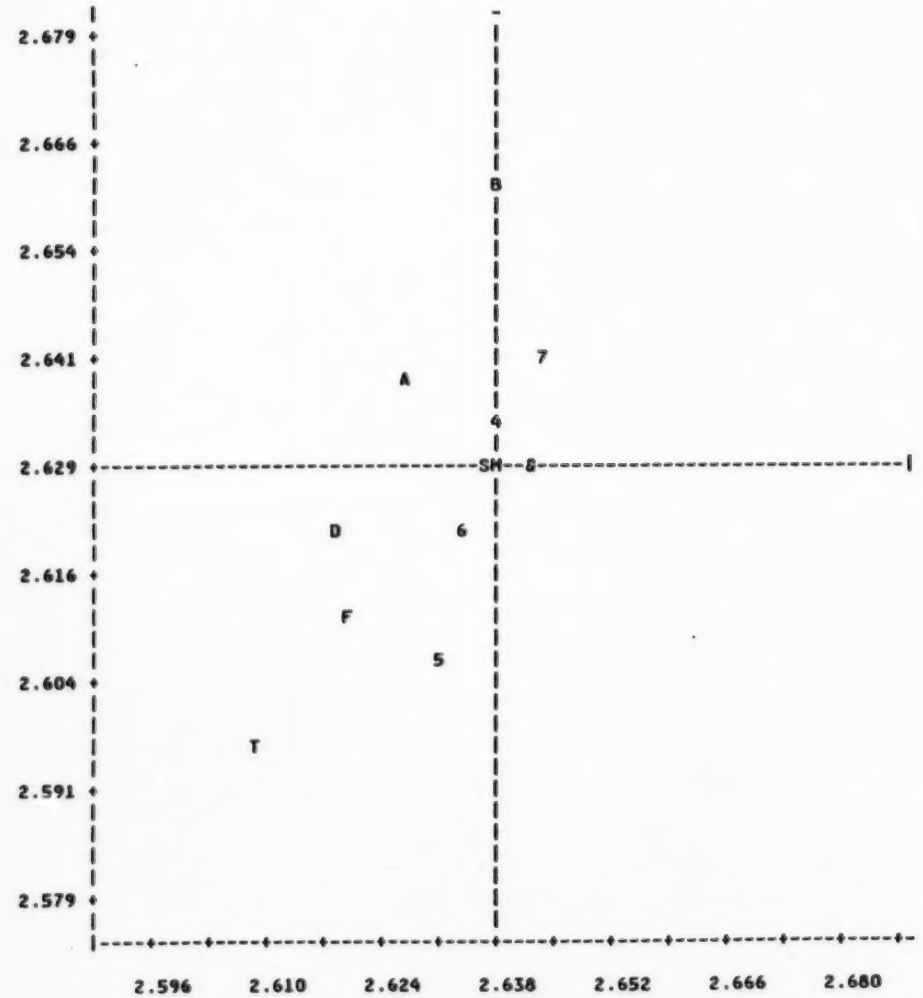
LAB. NO. 1 = A	LAB. NO. 15 = L
LAB. NO. 2 = B	LAB. NO. 16 = N
LAB. NO. 4 = D	LAB. NO. 19 = O
LAB. NO. 5 = E	LAB. NO. 20 = P
LAB. NO. 6 = F	LAB. NO. 21 = Q
LAB. NO. 62 = 2	LAB. NO. 22 = R
LAB. NO. 14 = K	
LAB. NO. 16 = M	
LAB. NO. 23 = S	
LAB. NO. 27 = T	
LAB. NO. 38 = U	
LAB. NO. 50 = V	
LAB. NO. 53 = W	
LAB. NO. 57 = X	
LAB. NO. 59 = Y	
LAB. NO. 60 = Z	
LAB. NO. 61 = 1	
LAB. NO. 64 = 3	
LAB. NO. 66 = 4	
LAB. NO. 67 = 5	
LAB. NO. 69 = 6	
LAB. NO. 71 = 7	
LAB. NO. 72 = 8	
LAB. NO. 80 = 9	
LAB. NO. 81 = 0	
LAB. NO. 82 = :	
LAB. NO. 83 = $	
LAB. NO. 84 = ¬	
LAB. NO. 85 =)	
LAB. NO. 86 = (	
LAB. NO. 87 = %	
LAB. NO. 88 = ♦	
LAB. NO. 89 = =	
LAB. NO. 90 = -	
LAB. NO. 91 = _	
LAB. NO. 92 = ;	
LAB. NO. 93 = *	
LAB. NO. 94 = *	
LAB. NO. 95 = *	
LAB. NO. 7 = G	
LAB. NO. 3 = C	
LAB. NO. 9 = H	
LAB. NO. 10 = I	
LAB. NO. 11 = J	

	MATERIAL 1	MATERIAL 2
MEAN	98.030	97.090
MEDIAN	98.550	97.200
STANDARD DEVIATION	0.563	0.860
STANDARD ERROR OF THE MEAN	0.080	0.122

NO OF POINTS IN EACH QUADRANT
NE = 17
SE = 4
NW = 11
SW = 17

TEST 9: RELATIVE DENSITY (COARSE AGGREGATE - BULKS.S .D.)
SCATTER PLOT ANALYSIS
SCALE: 0.006 UNITS=1 CM

HORIZONTAL AXIS: MATERIAL 1
VERTICAL AXIS: MATERIAL 2



LEGEND
======

LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 23 = S
LAB. NO. 27 = T
LAB. NO. 66 = 4
LAB. NO. 67 = 5
LAB. NO. 69 = 6
LAB. NO. 71 = 7

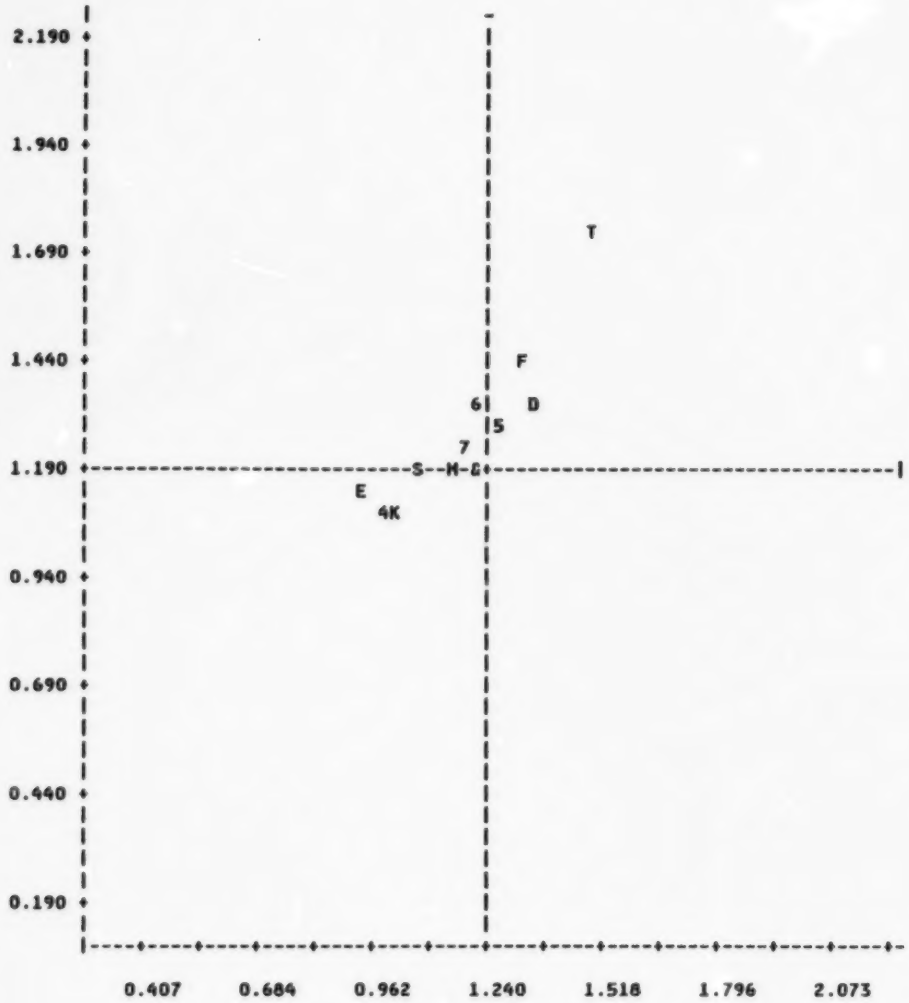
	MATERIAL 1	MATERIAL 2
MEAN	2.633	2.627
MEDIAN	2.638	2.629
STANDARD DEVIATION	0.011	0.015
STANDARD ERROR OF THE MEAN	0.003	0.004

NO OF POINTS IN EACH QUADRANT

NE = 3
SE = 0
NW = 5
SW = 5

TEST 10: ABSORPTION (COARSE AGGREGATE)
SCATTER PLOT ANALYSIS
SCALE: 0.111 UNITS=1 CM

HORIZONTAL AXIS: MATERIAL 1
VERTICAL AXIS: MATERIAL 2



LEGEND
======

LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 23 = S
LAB. NO. 27 = T
LAB. NO. 66 = 4
LAB. NO. 67 = 5
LAB. NO. 69 = 6
LAB. NO. 71 = 7

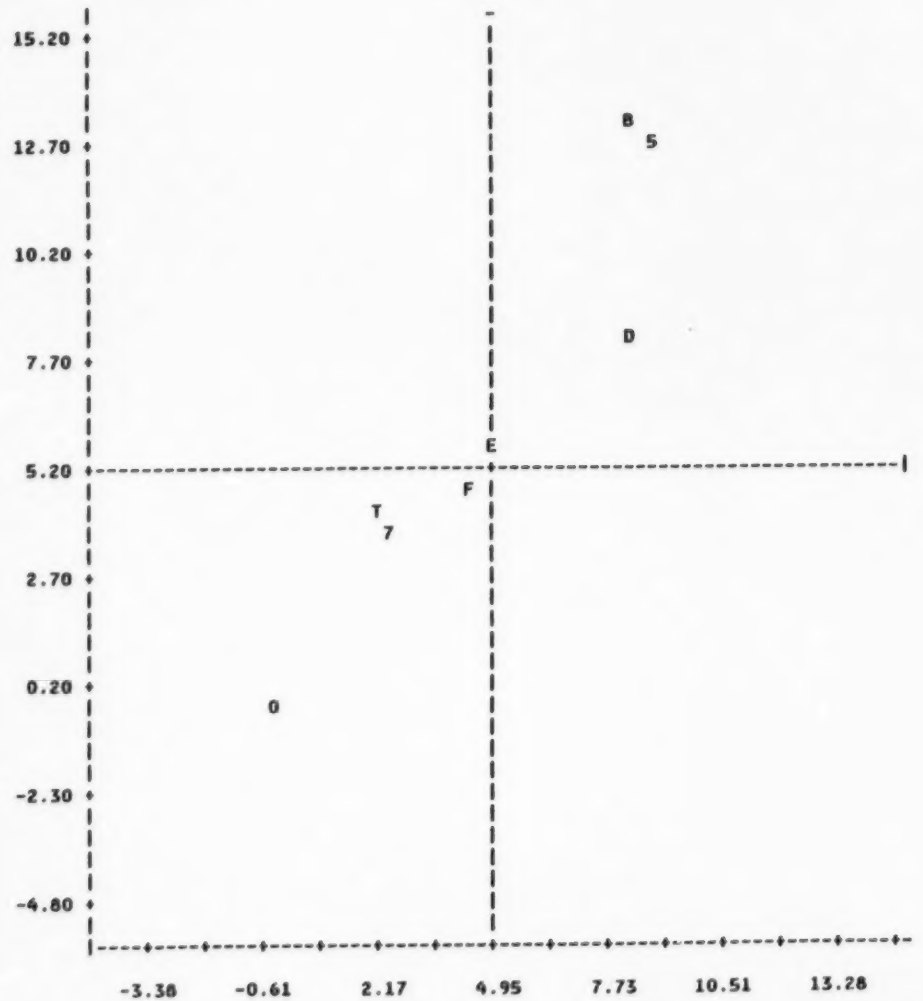
	MATERIAL 1	MATERIAL 2
MEAN	1.215	1.263
MEDIAN	1.240	1.190
STANDARD DEVIATION	0.157	0.164
STANDARD ERROR OF THE MEAN	0.044	0.046

NO OF POINTS IN EACH QUADRANT

NE = 4
SE = 0
NW = 6
SW = 3

TEST 11: MGSO4 SOUNDNESS (COARSE AGGREGATE - MTC RESULTS)
SCATTER PLOT ANALYSIS
SCALE: 1.111 UNITS=1 CM

HORIZONTAL AXIS: MATERIAL 1
VERTICAL AXIS: MATERIAL 2



LEGEND
======

LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 27 = T
LAB. NO. 67 = 5
LAB. NO. 71 = 7
LAB. NO. 81 = 0

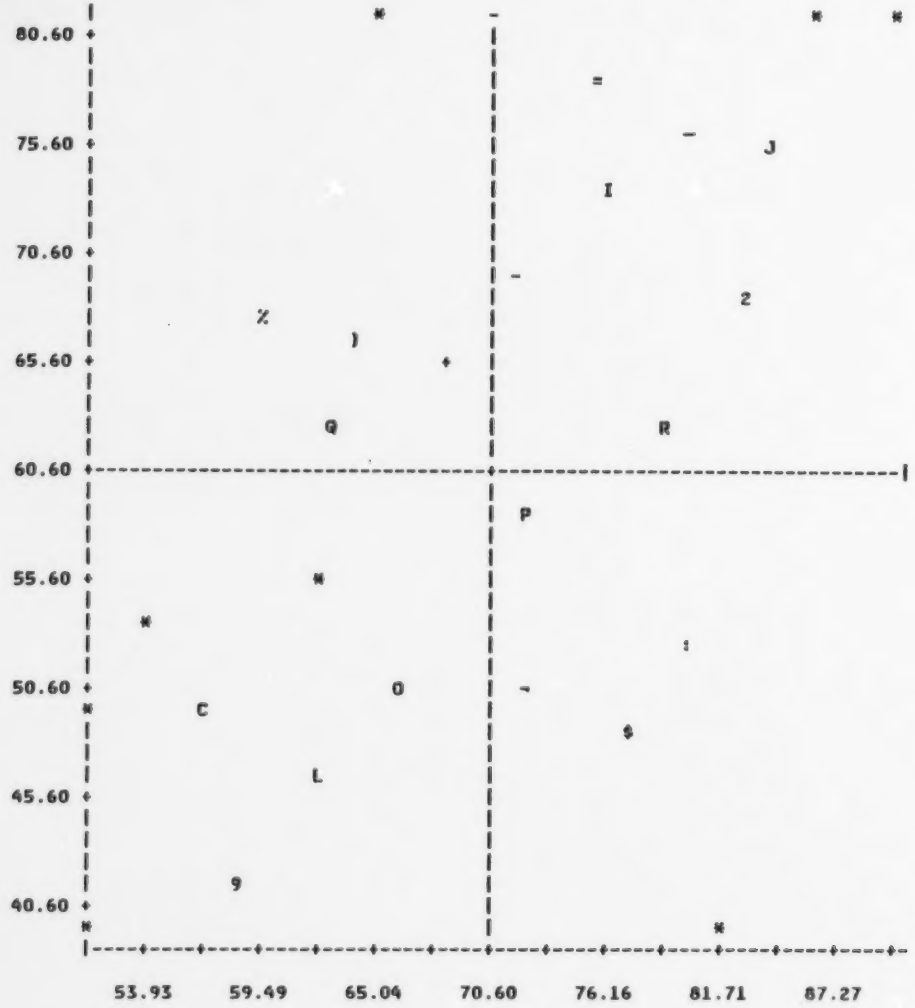
	MATERIAL 1	MATERIAL 2
MEAN	5.192	6.491
MEDIAN	4.950	5.200
STANDARD DEVIATION	3.377	4.330
STANDARD ERROR OF THE MEAN	1.194	1.531

NO OF POINTS IN EACH QUADRANT

NE = 3
SE = 0
NW = 1
SW = 4

TEST 12: PERCENT CRUSHED PARTICLES
SCATTER PLOT ANALYSIS
SCALE: 2.222 UNITS=1 CM

HORIZONTAL AXIS: MATERIAL 1
VERTICAL AXIS: MATERIAL 2



LEGEND
======

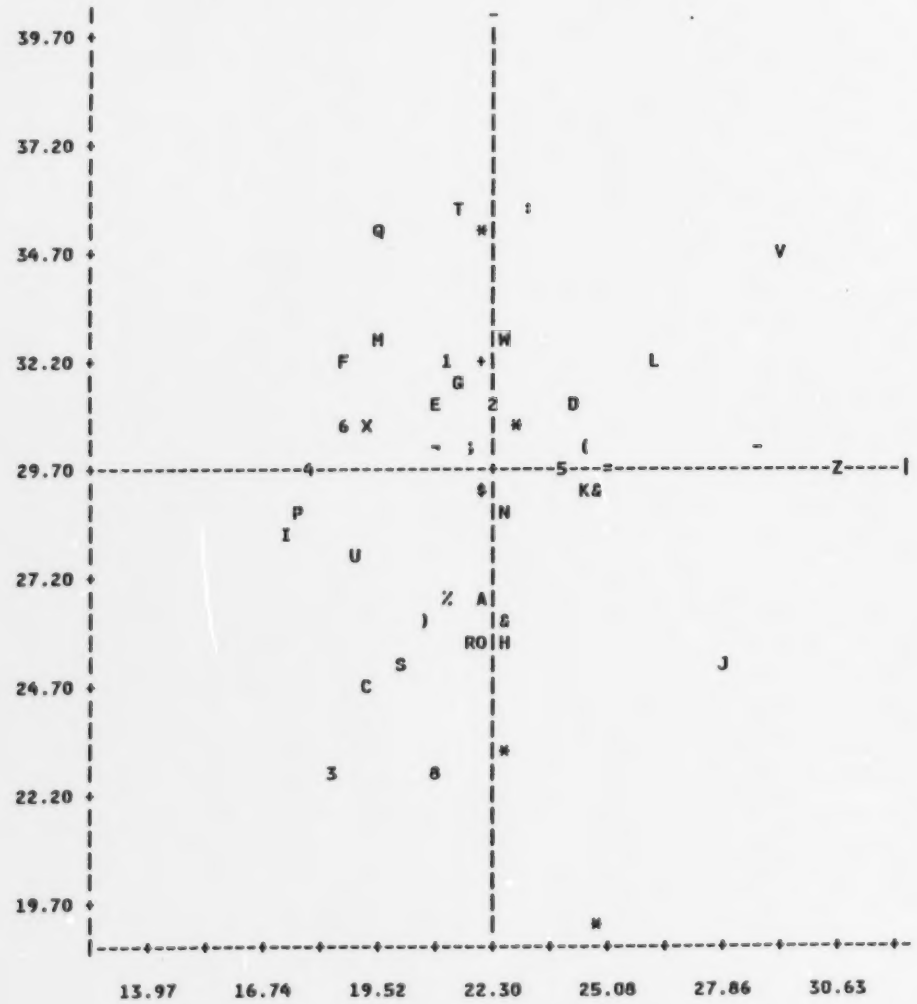
LAB. NO. 62 = 2
LAB. NO. 80 = 9
LAB. NO. 81 = 0
LAB. NO. 82 = :
LAB. NO. 83 = $
LAB. NO. 84 = -
LAB. NO. 85 =)
LAB. NO. 86 = (
LAB. NO. 87 = %
LAB. NO. 88 = +
LAB. NO. 89 = =
LAB. NO. 90 = -
LAB. NO. 91 = _
LAB. NO. 92 = ;
LAB. NO. 93 = *
LAB. NO. 94 = *
LAB. NO. 95 = *
LAB. NO. 7 = G
LAB. NO. 3 = C
LAB. NO. 9 = H
LAB. NO. 10 = I
LAB. NO. 11 = J
LAB. NO. 15 = L
LAB. NO. 18 = N
LAB. NO. 19 = O
LAB. NO. 20 = P
LAB. NO. 21 = Q
LAB. NO. 22 = R

	MATERIAL 1	MATERIAL 2
MEAN	68.621	61.043
MEDIAN	70.600	60.600
STANDARD DEVIATION	11.931	14.584
STANDARD ERROR OF THE MEAN	2.255	2.756

NO OF POINTS IN EACH QUADRANT

NE = 7
SE = 4
NW = 4
SW = 6

TEST 20: PERCENT RETAINED ON 2.36 MM SIEVE (FINE AGGREGATE)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 1.111 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



	MATERIAL 1	MATERIAL 2
MEAN	22.549	29.061
MEDIAN	22.300	29.700
STANDARD DEVIATION	2.755	3.131
STANDARD ERROR OF THE MEAN	0.394	0.447

LEGEND

LAB. NO. 1	A
LAB. NO. 2	B
LAB. NO. 4	D
LAB. NO. 5	E
LAB. NO. 6	F
LAB. NO. 62	2
LAB. NO. 14	K
LAB. NO. 16	M
LAB. NO. 23	S
LAB. NO. 27	T
LAB. NO. 38	U
LAB. NO. 50	V
LAB. NO. 53	W
LAB. NO. 57	X
LAB. NO. 59	Y
LAB. NO. 60	Z
LAB. NO. 61	1
LAB. NO. 64	3
LAB. NO. 66	4
LAB. NO. 67	5
LAB. NO. 69	6
LAB. NO. 71	7
LAB. NO. 72	8
LAB. NO. 80	9
LAB. NO. 82	:
LAB. NO. 83	$
LAB. NO. 84	¬
LAB. NO. 85	)
LAB. NO. 86	(
LAB. NO. 87	%
LAB. NO. 88	+
LAB. NO. 89	=
LAB. NO. 90	-
LAB. NO. 91	_
LAB. NO. 92	;
LAB. NO. 93	*
LAB. NO. 94	*
LAB. NO. 95	*
LAB. NO. 7	G
LAB. NO. 3	C
LAB. NO. 9	H
LAB. NO. 10	I
LAB. NO. 11	J
LAB. NO. 15	L

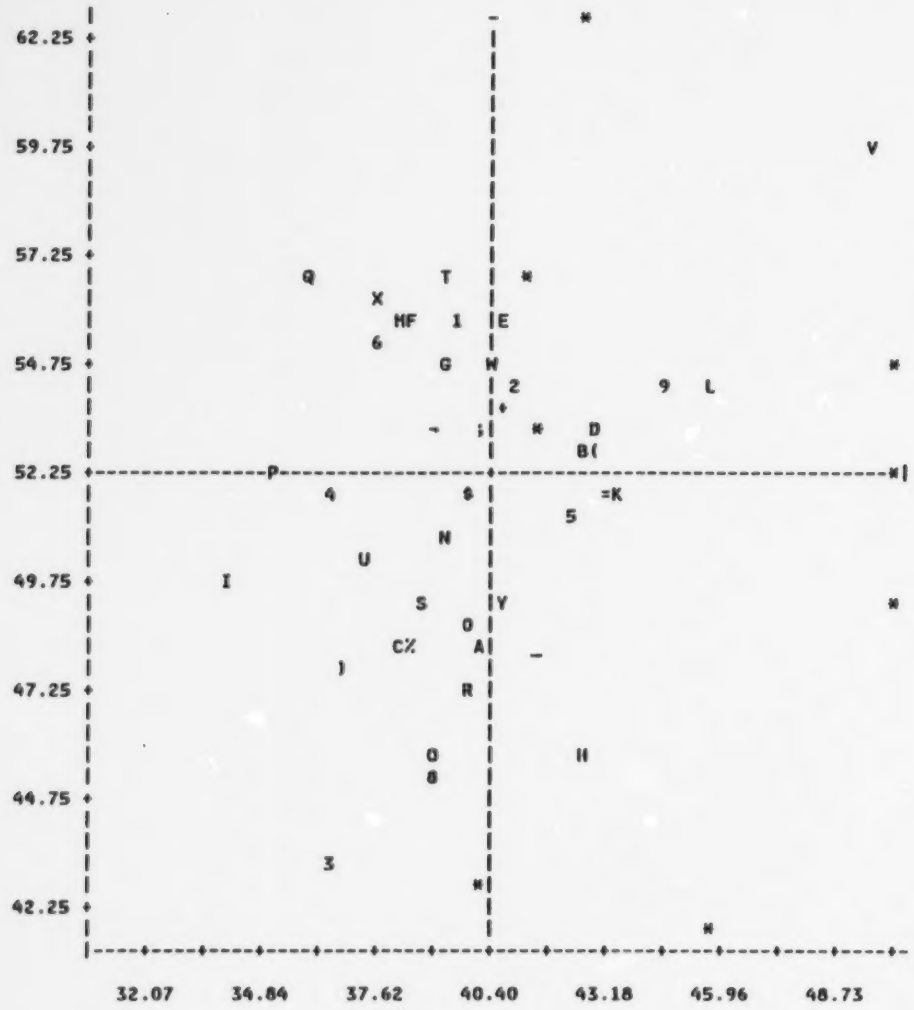
LEGEND

LAB. NO. 18	N
LAB. NO. 19	O
LAB. NO. 20	P
LAB. NO. 21	Q
LAB. NO. 22	R

NO OF POINTS IN EACH QUADRANT

NE	11
SE	9
NW	15
SW	13

TEST 21: PERCENT RETAINED ON 1.18 MM SIEVE (FINE AGGREGATE)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 1.111 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



LEGEND

LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 62 = 2
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 23 = S
LAB. NO. 27 = T
LAB. NO. 38 = U
LAB. NO. 50 = V
LAB. NO. 53 = W
LAB. NO. 57 = X
LAB. NO. 59 = Y
LAB. NO. 60 = Z
LAB. NO. 61 = 1
LAB. NO. 64 = 3
LAB. NO. 66 = 4
LAB. NO. 67 = 5
LAB. NO. 69 = 6
LAB. NO. 71 = 7
LAB. NO. 72 = 8
LAB. NO. 80 = 9
LAB. NO. 81 = 0
LAB. NO. 82 = :
LAB. NO. 83 = $
LAB. NO. 84 = -
LAB. NO. 85 =)
LAB. NO. 86 = (
LAB. NO. 87 = %
LAB. NO. 88 = +
LAB. NO. 89 = =
LAB. NO. 90 = -
LAB. NO. 91 = _
LAB. NO. 92 = ;
LAB. NO. 93 = *
LAB. NO. 94 = *
LAB. NO. 95 = *
LAB. NO. 7 = G
LAB. NO. 3 = C
LAB. NO. 9 = H
LAB. NO. 10 = I
LAB. NO. 11 = J

LEGEND

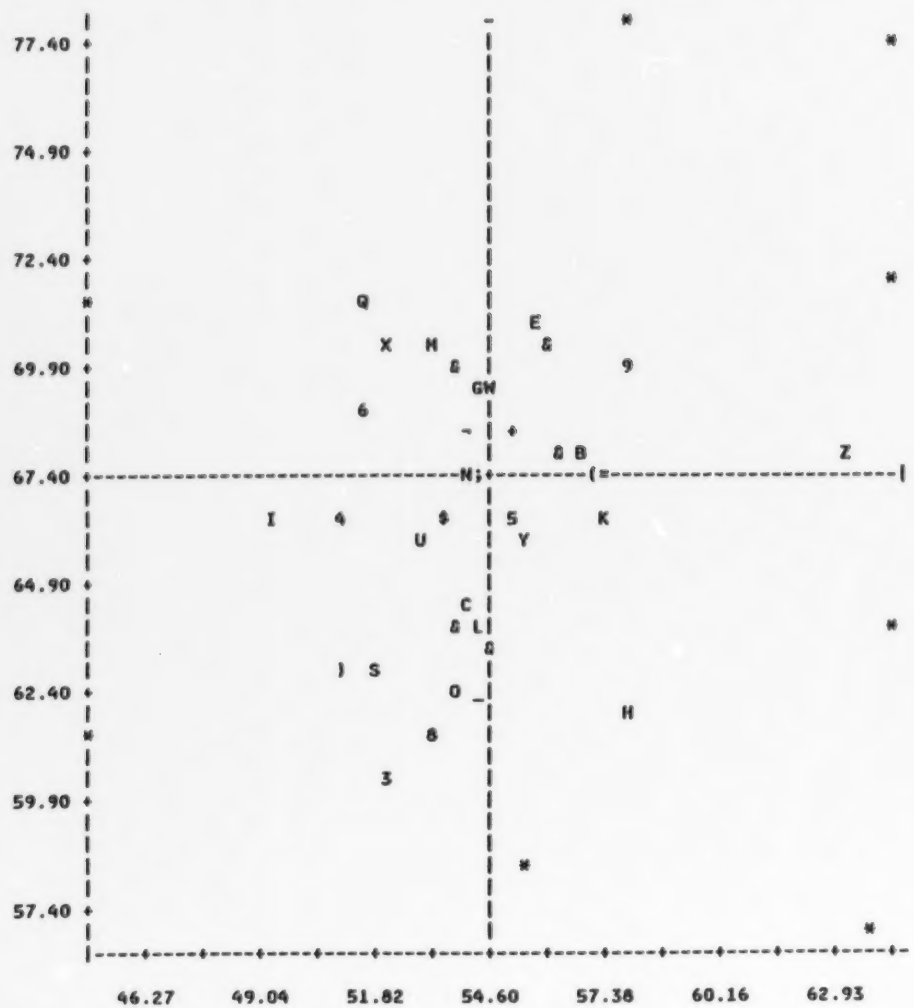
LAB. NO. 15 = L
LAB. NO. 18 = N
LAB. NO. 19 = O
LAB. NO. 20 = P
LAB. NO. 21 = Q
LAB. NO. 22 = R

	MATERIAL 1	MATERIAL 2
MEAN	41.188	51.618
MEDIAN	40.400	52.250
STANDARD DEVIATION	2.642	3.575
STANDARD ERROR OF THE MEAN	0.374	0.506

NO OF POINTS IN EACH QUADRANT

NE = 11
SE = 6
NW = 12
SW = 16

TEST 22: PERCENT RETAINED ON 600 UM SIEVE (FINE AGGREGATE)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 1.111 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



	MATERIAL 1	MATERIAL 2
MEAN	55.390	66.740
MEDIAN	54.600	67.400
STANDARD DEVIATION	2.074	3.120
STANDARD ERROR OF THE MEAN	0.293	0.441

LEGEND

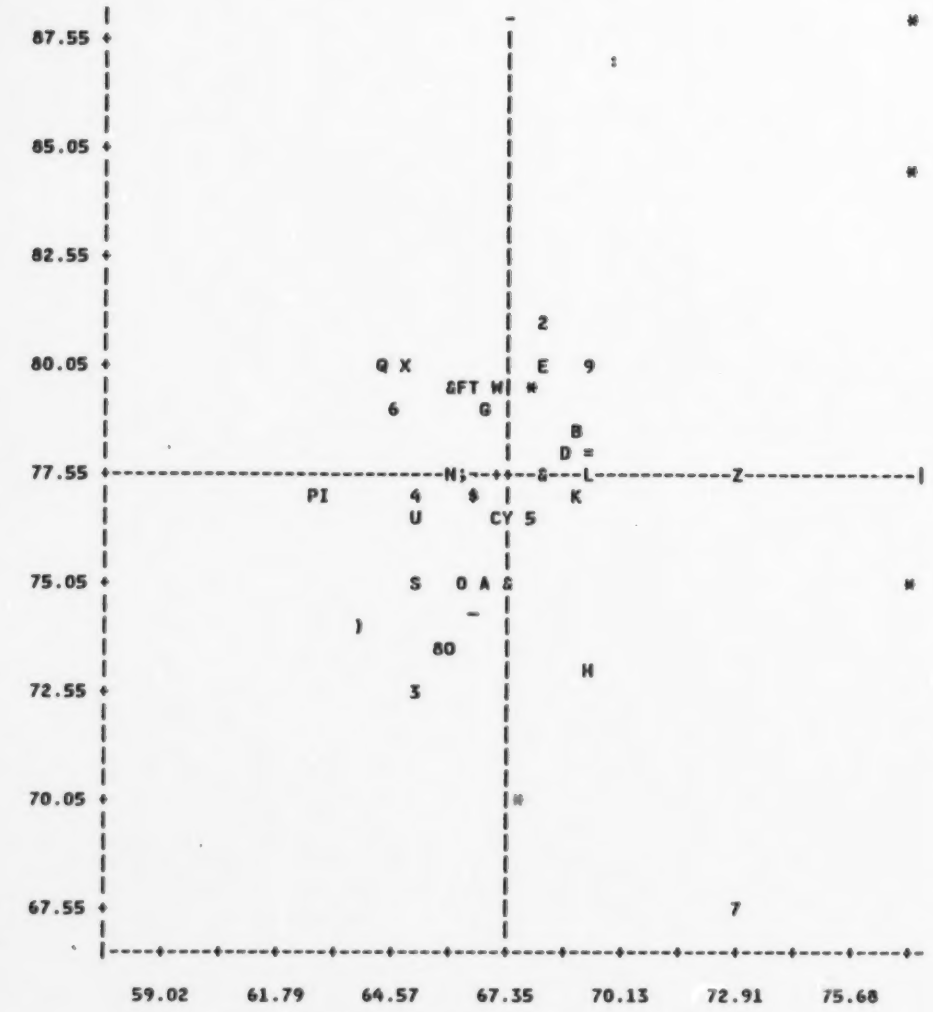
LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 62 = 2
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 23 = S
LAB. NO. 27 = T
LAB. NO. 38 = U
LAB. NO. 50 = V
LAB. NO. 53 = W
LAB. NO. 57 = X
LAB. NO. 59 = Y
LAB. NO. 60 = Z
LAB. NO. 61 = 1
LAB. NO. 64 = 3
LAB. NO. 66 = 4
LAB. NO. 67 = 5
LAB. NO. 69 = 6
LAB. NO. 71 = 7
LAB. NO. 72 = 8
LAB. NO. 80 = 9
LAB. NO. 81 = 0
LAB. NO. 82 = :
LAB. NO. 83 = $
LAB. NO. 84 = -
LAB. NO. 85 =)
LAB. NO. 86 = (
LAB. NO. 87 = %
LAB. NO. 88 = +
LAB. NO. 89 = =
LAB. NO. 90 = -
LAB. NO. 91 = _
LAB. NO. 92 = ;
LAB. NO. 93 = *
LAB. NO. 94 = *
LAB. NO. 95 = *
LAB. NO. 7 = G
LAB. NO. 3 = C
LAB. NO. 9 = H
LAB. NO. 10 = I
LAB. NO. 11 = J

LEGEND

LAB. NO. 15 = L
LAB. NO. 18 = N
LAB. NO. 19 = O
LAB. NO. 20 = P
LAB. NO. 21 = Q
LAB. NO. 22 = R

NO OF POINTS IN EACH QUADRANT
NE = 11
SE = 5
NW = 11
SW = 14

TEST 23: PERCENT RETAINED ON 300 UM SIEVE (FINE AGGREGATE)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 1.111 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



LEGEND
======

LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 62 = 2
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 23 = S
LAB. NO. 27 = T
LAB. NO. 38 = U
LAB. NO. 50 = V
LAB. NO. 53 = W
LAB. NO. 57 = X
LAB. NO. 59 = Y
LAB. NO. 60 = Z
LAB. NO. 61 = 1
LAB. NO. 64 = 3
LAB. NO. 66 = 4
LAB. NO. 67 = 5
LAB. NO. 69 = 6
LAB. NO. 71 = 7
LAB. NO. 72 = 8
LAB. NO. 80 = 9
LAB. NO. 81 = 0
LAB. NO. 82 = :
LAB. NO. 83 = $
LAB. NO. 84 = -
LAB. NO. 85 =)
LAB. NO. 86 = (
LAB. NO. 87 = %
LAB. NO. 88 = +
LAB. NO. 89 = =
LAB. NO. 90 = -
LAB. NO. 91 = _
LAB. NO. 92 = ;
LAB. NO. 93 = *
LAB. NO. 94 = *
LAB. NO. 95 = *
LAB. NO. 7 = G
LAB. NO. 3 = C
LAB. NO. 9 = H
LAB. NO. 10 = I
LAB. NO. 11 = J

LEGEND
======

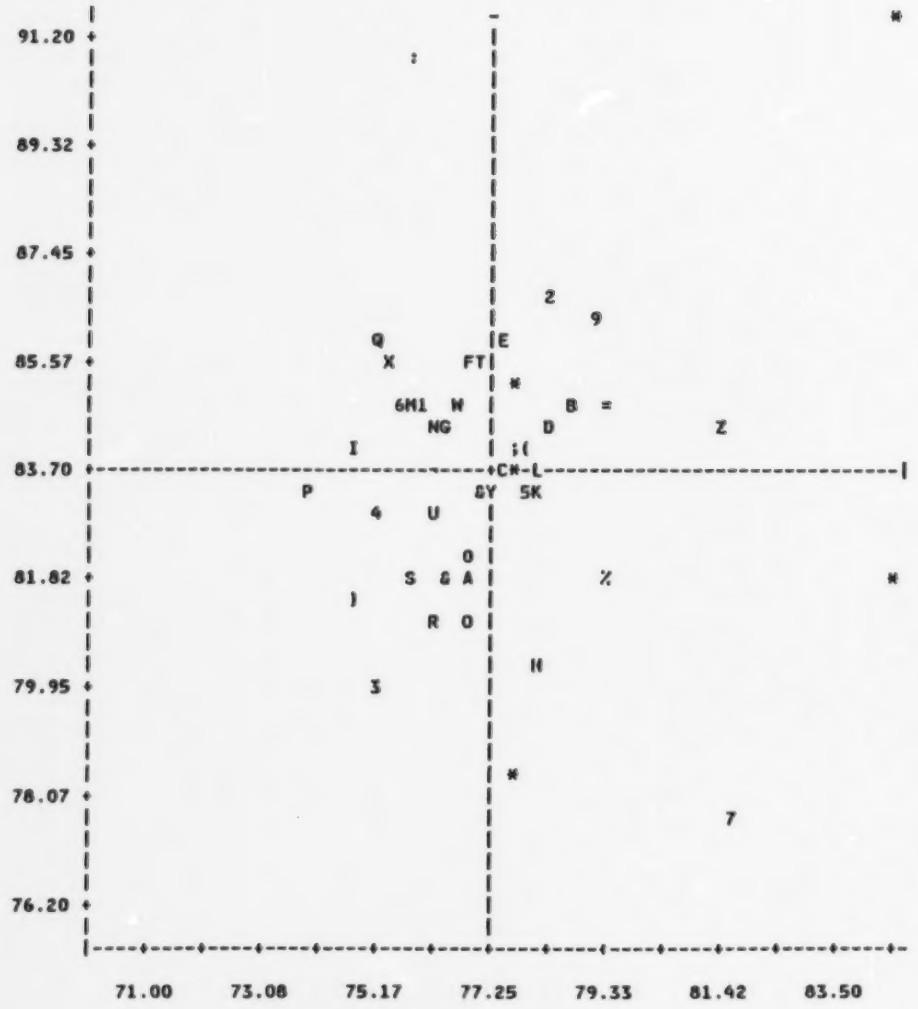
LAB. NO. 15 = L
LAB. NO. 18 = N
LAB. NO. 19 = O
LAB. NO. 20 = P
LAB. NO. 21 = Q
LAB. NO. 22 = R

	MATERIAL 1	MATERIAL 2
MEAN	68.096	77.432
MEDIAN	67.350	77.550
STANDARD DEVIATION	1.768	2.006
STANDARD ERROR OF THE MEAN	0.250	0.284

NO OF POINTS IN EACH QUADRANT

NE = 12
SE = 5
NW = 13
SW = 17

TEST 24: PERCENT RETAINED ON 150 UM SIEVE (FINE AGGREGATE)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.833 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



	MATERIAL 1	MATERIAL 2
MEAN	78.020	83.940
MEDIAN	77.250	83.700
STANDARD DEVIATION	1.297	1.519
STANDARD ERROR OF THE MEAN	0.183	0.215

LEGEND

LAB. NO. 1	A
LAB. NO. 2	B
LAB. NO. 4	D
LAB. NO. 5	E
LAB. NO. 6	F
LAB. NO. 62	2
LAB. NO. 14	K
LAB. NO. 16	M
LAB. NO. 23	S
LAB. NO. 27	T
LAB. NO. 38	U
LAB. NO. 50	V
LAB. NO. 53	W
LAB. NO. 57	X
LAB. NO. 59	Y
LAB. NO. 60	Z
LAB. NO. 61	1
LAB. NO. 64	3
LAB. NO. 66	4
LAB. NO. 67	5
LAB. NO. 69	6
LAB. NO. 71	7
LAB. NO. 72	8
LAB. NO. 80	9
LAB. NO. 81	0
LAB. NO. 82	:
LAB. NO. 83	$
LAB. NO. 84	=
LAB. NO. 85	)
LAB. NO. 86	(
LAB. NO. 87	%
LAB. NO. 88	+
LAB. NO. 89	=
LAB. NO. 90	-
LAB. NO. 91	_
LAB. NO. 92	;
LAB. NO. 93	*
LAB. NO. 94	*
LAB. NO. 95	*
LAB. NO. 7	G
LAB. NO. 3	C
LAB. NO. 9	H
LAB. NO. 10	I
LAB. NO. 11	J

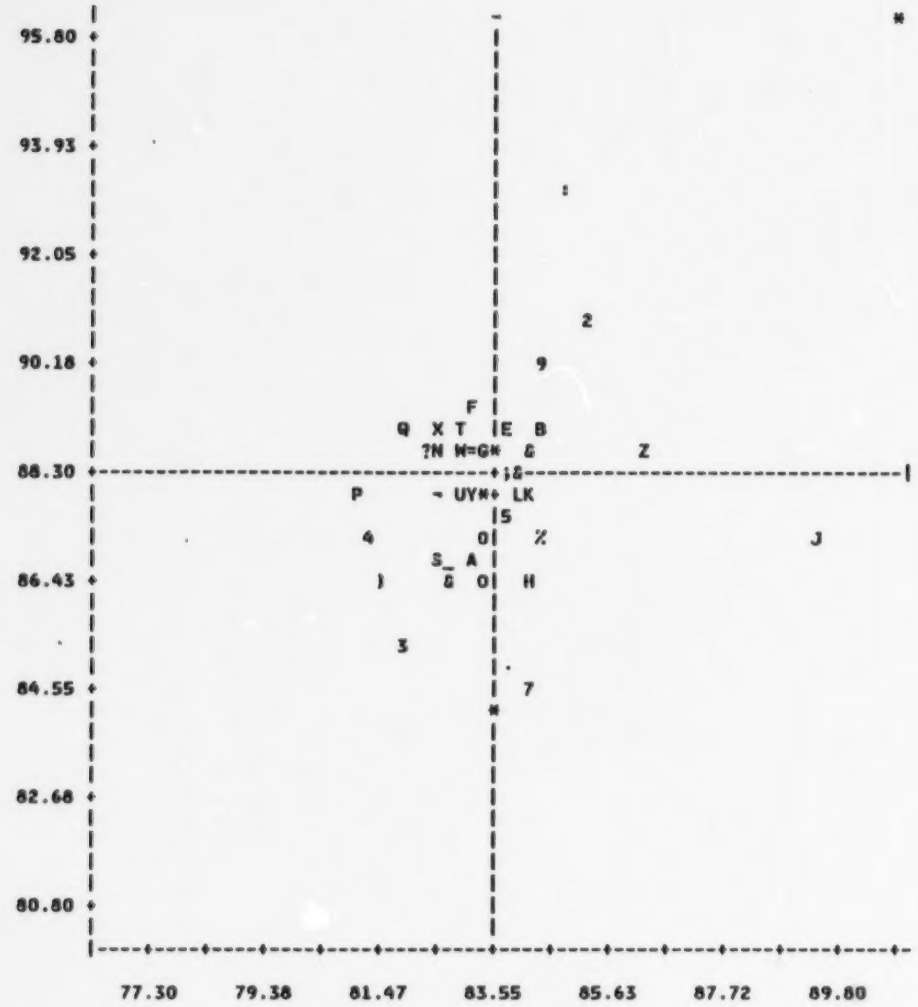
LEGEND

LAB. NO. 15	L
LAB. NO. 18	N
LAB. NO. 19	O
LAB. NO. 20	P
LAB. NO. 21	Q
LAB. NO. 22	R

NO OF POINTS IN EACH QUADRANT

NE	13
SE	6
NW	13
SW	15

TEST 25: PERCENT RETAINED ON 75 UM SIEVE (FINE AGGREGATE)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.833 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



LEGEND

LAB. NO. 1	A
LAB. NO. 2	B
LAB. NO. 4	D
LAB. NO. 5	E
LAB. NO. 6	F
LAB. NO. 62	2
LAB. NO. 14	K
LAB. NO. 16	M
LAB. NO. 23	S
LAB. NO. 27	T
LAB. NO. 38	U
LAB. NO. 50	V
LAB. NO. 53	W
LAB. NO. 57	X
LAB. NO. 59	Y
LAB. NO. 60	Z
LAB. NO. 61	1
LAB. NO. 64	3
LAB. NO. 66	4
LAB. NO. 67	5
LAB. NO. 69	6
LAB. NO. 71	7
LAB. NO. 72	8
LAB. NO. 80	9
LAB. NO. 81	0
LAB. NO. 82	:
LAB. NO. 83	$
LAB. NO. 84	¬
LAB. NO. 85	)
LAB. NO. 86	(
LAB. NO. 87	%
LAB. NO. 88	+
LAB. NO. 89	=
LAB. NO. 90	-
LAB. NO. 91	_
LAB. NO. 92	;
LAB. NO. 93	*
LAB. NO. 94	*
LAB. NO. 95	*
LAB. NO. 7	G
LAB. NO. 3	C
LAB. NO. 9	H
LAB. NO. 10	I
LAB. NO. 11	J

LEGEND

LAB. NO. 15	L
LAB. NO. 18	N
LAB. NO. 19	O
LAB. NO. 20	P
LAB. NO. 21	Q
LAB. NO. 22	R

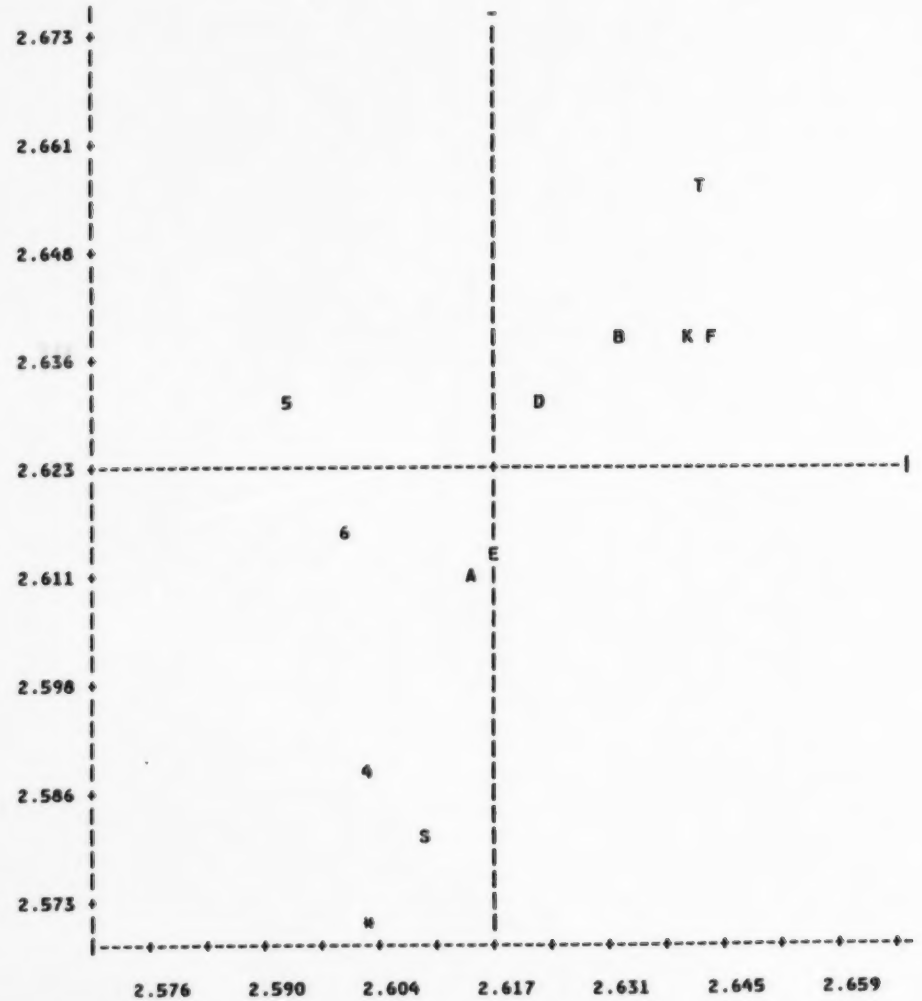
	MATERIAL 1	MATERIAL 2
MEAN	84.200	88.420
MEDIAN	83.550	88.300
STANDARD DEVIATION	0.948	1.043
STANDARD ERROR OF THE MEAN	0.134	0.147

NO OF POINTS IN EACH QUADRANT

NE	11
SE	7
NW	13
SW	17

TEST 27: RELATIVE DENSITY (FINE AGGREGATE - BULK S.S. D.)
SCATTER PLOT ANALYSIS
SCALE: 0.006 UNITS=1 CM

HORIZONTAL AXIS: MATERIAL 1
VERTICAL AXIS: MATERIAL 2



LEGEND
======

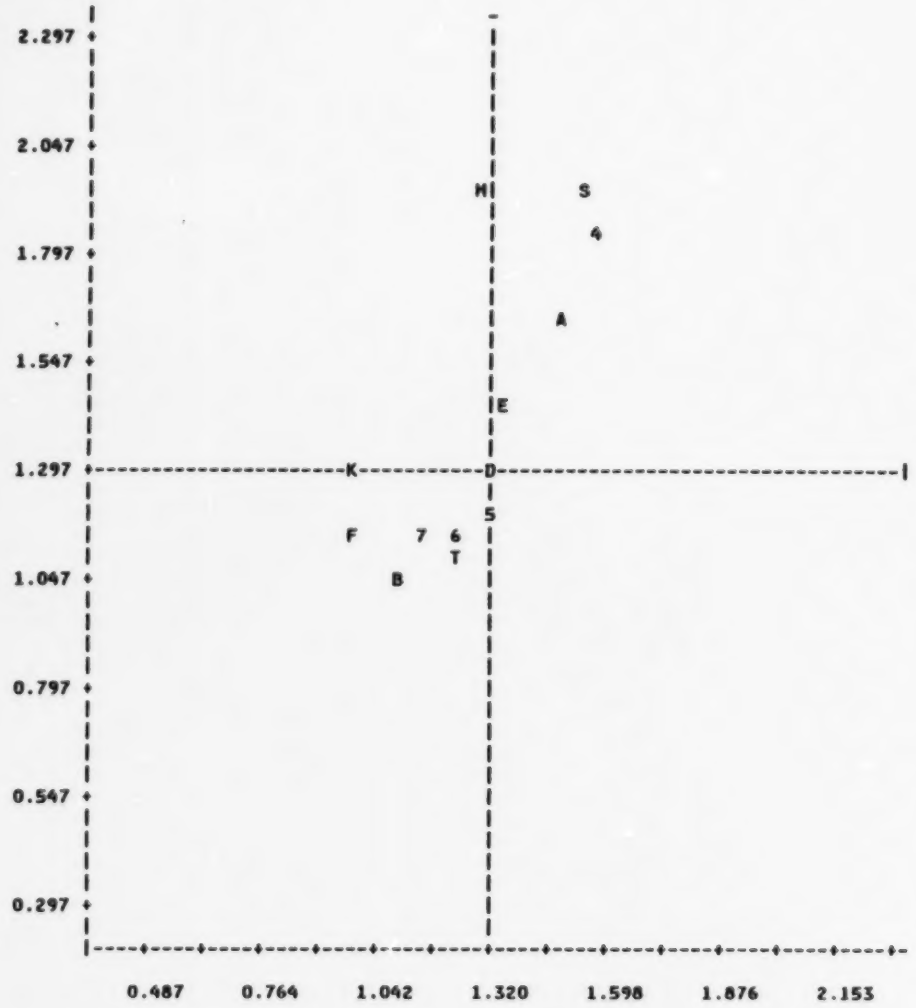
LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 23 = S
LAB. NO. 27 = T
LAB. NO. 66 = 4
LAB. NO. 67 = 5
LAB. NO. 69 = 6

	MATERIAL 1	MATERIAL 2
MEAN	2.620	2.618
MEDIAN	2.618	2.623
STANDARD DEVIATION	0.018	0.024
STANDARD ERROR OF THE MEAN	0.005	0.007

NO OF POINTS IN EACH QUADRANT
NE = 5
SE = 0
NW = 1
SW = 5

TEST 28: ABSORPTION (FINE AGGREGATE)
SCATTER PLOT ANALYSIS
SCALE: 0.111 UNITS=1 CM

HORIZONTAL AXIS: MATERIAL 1
VERTICAL AXIS: MATERIAL 2



LEGEND
======

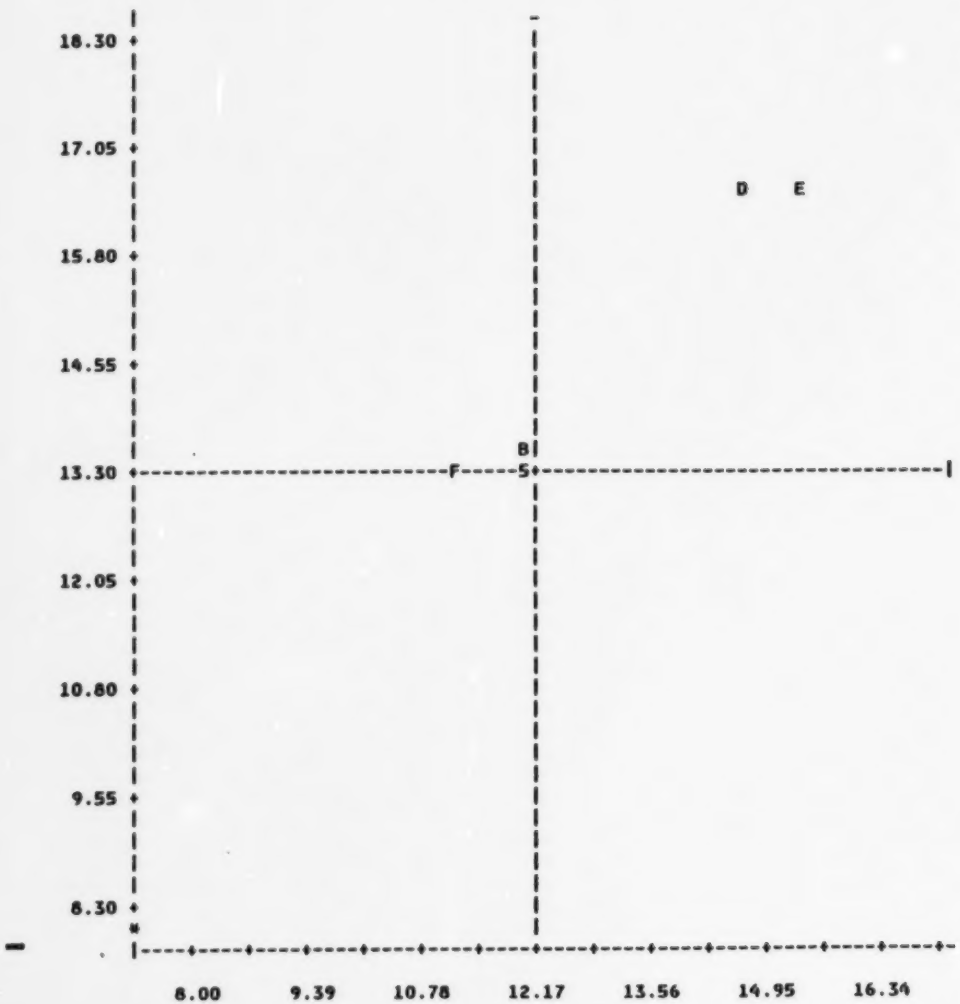
LAB. NO. 1	= A
LAB. NO. 2	= B
LAB. NO. 4	= D
LAB. NO. 5	= E
LAB. NO. 6	= F
LAB. NO. 14	= K
LAB. NO. 16	= H
LAB. NO. 23	= S
LAB. NO. 27	= T
LAB. NO. 66	= 4
LAB. NO. 67	= 5
LAD. NO. 69	= 6
LAB. NO. 71	= 7

	MATERIAL 1	MATERIAL 2
MEAN	1.303	1.400
MEDIAN	1.320	1.297
STANDARD DEVIATION	0.194	0.304
STANDARD ERROR OF THE MEAN	0.054	0.084

NO OF POINTS IN EACH QUADRANT

NE	= 4
SE	= 0
NW	= 3
SW	= 6

TEST 29: MAGNESIUM SULFATE SOUNDNESS LOSS, % (FINE AGGREGATE)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.556 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



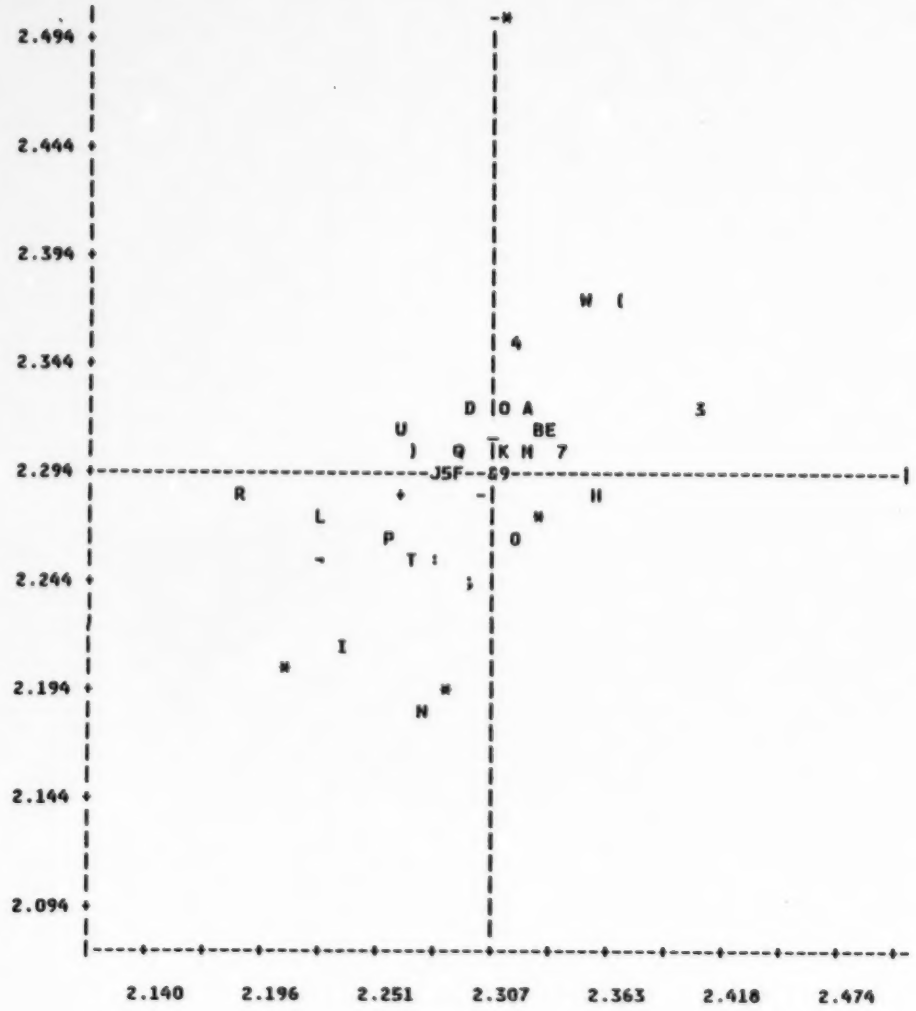
LEGEND
======
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 27 = T
LAB. NO. 67 = 5
LAB. NO. 71 = 7

	MATERIAL 1	MATERIAL 2
MEAN	10.967	12.083
MEDIAN	12.170	13.300
STANDARD DEVIATION	4.163	4.505
STANDARD ERROR OF THE MEAN	1.574	1.703

NO OF POINTS IN EACH QUADRANT
NE = 2
SE = 0
NW = 3
SW = 0

TEST 31: MAXIMUM WET DENSITY G/CM3 (MOISTURE - DENSITY RELATIONSHIP)
SCATTER PLOT ANALYSIS
SCALE: 0.022 UNITS=1 CM

HORIZONTAL AXIS: MATERIAL 1
VERTICAL AXIS: MATERIAL 2



LEGEND
======

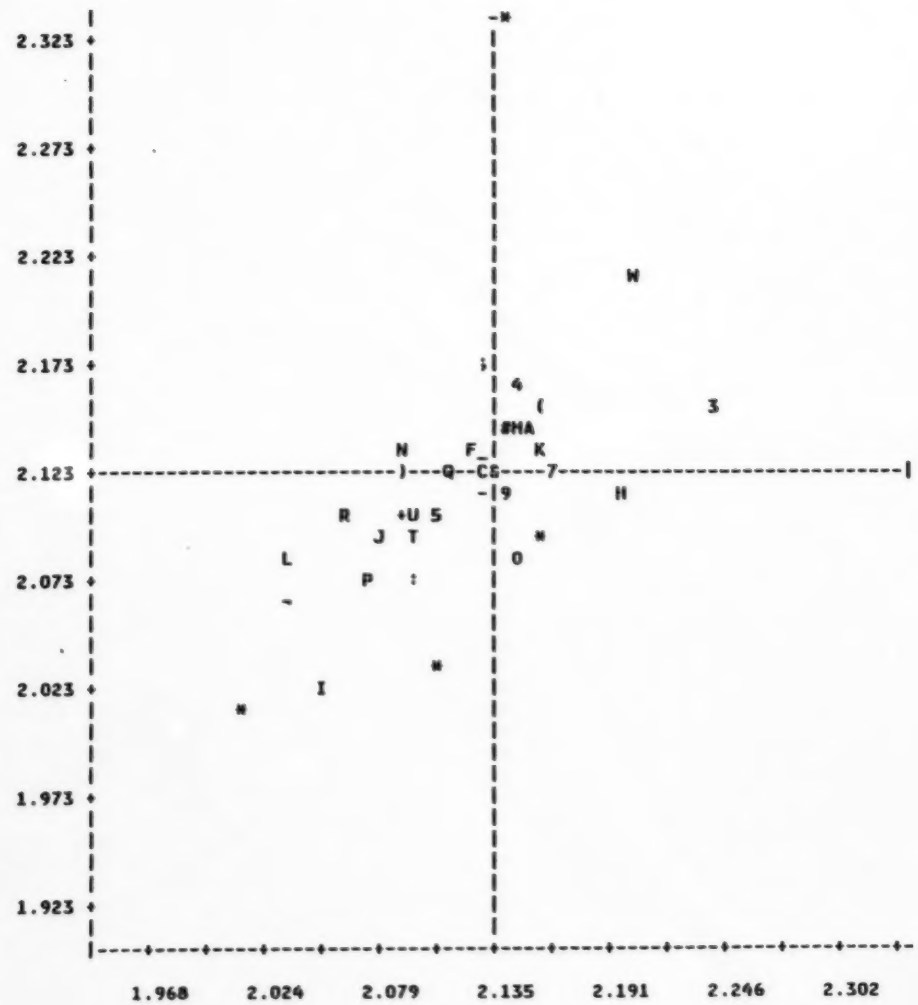
LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 27 = T
LAB. NO. 38 = U
LAB. NO. 53 = W
LAB. NO. 60 = Z
LAB. NO. 64 = 3
LAB. NO. 66 = 4
LAB. NO. 67 = 5
LAB. NO. 71 = 7
LAB. NO. 80 = 9
LAB. NO. 81 = 0
LAB. NO. 82 = :
LAB. NO. 84 = -
LAB. NO. 85 =)
LAB. NO. 86 = (
LAB. NO. 88 = +
LAB. NO. 90 = -
LAB. NO. 91 = _
LAB. NO. 92 = ;
LAB. NO. 93 = *
LAB. NO. 94 = *
LAB. NO. 95 = *
LAB. NO. 7 = G
LAB. NO. 3 = C
LAB. NO. 9 = H
LAB. NO. 10 = I
LAB. NO. 11 = J
LAB. NO. 15 = L
LAB. NO. 18 = N
LAB. NO. 19 = O
LAB. NO. 20 = P
LAB. NO. 21 = Q
LAB. NO. 22 = R

	MATERIAL 1	MATERIAL 2
MEAN	2.301	2.296
MEDIAN	2.307	2.294
STANDARD DEVIATION	0.045	0.039
STANDARD ERROR OF THE MEAN	0.007	0.006

NO OF POINTS IN EACH QUADRANT

NE = 12
SE = 3
NW = 10
SW = 13

TEST 32: MAXIMUM DRY DENSITY G/CM3 (MOISTURE - DENSITY RELATIONSHIP)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.022 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



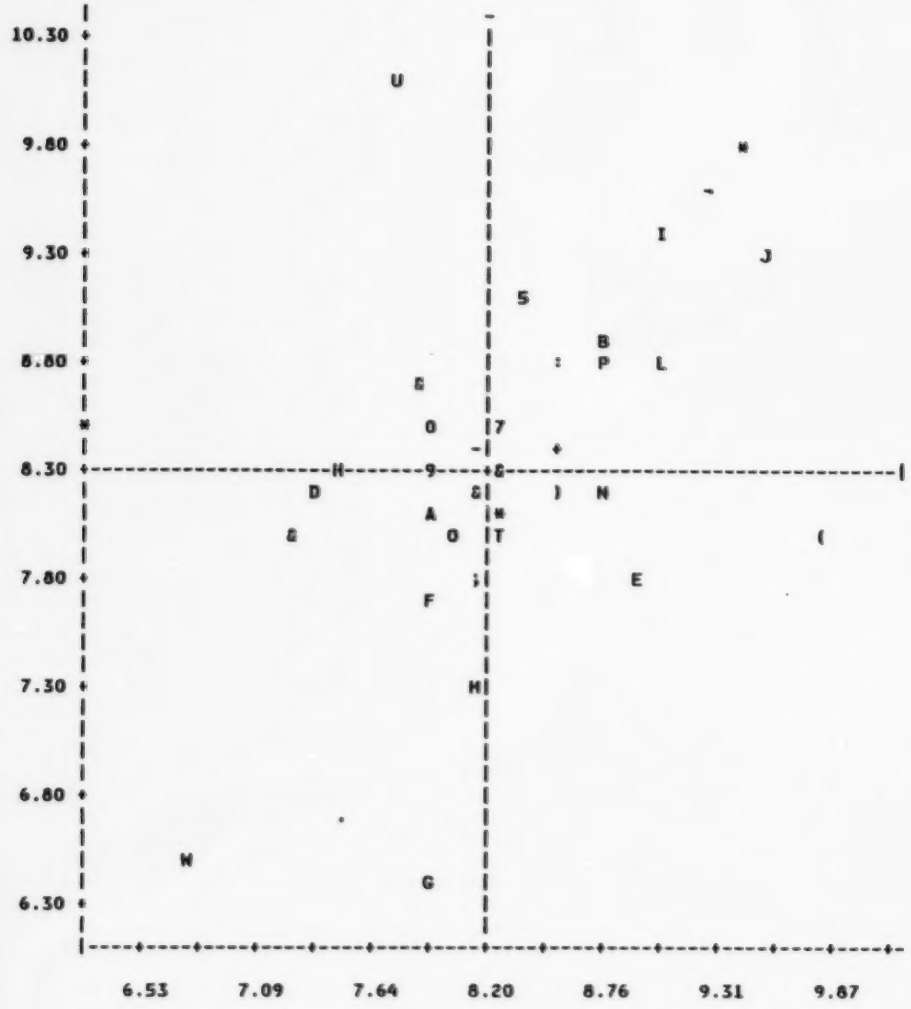
LEGEND
======

LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 27 = T
LAB. NO. 38 = U
LAB. NO. 53 = W
LAB. NO. 60 = Z
LAB. NO. 64 = 3
LAB. NO. 66 = 4
LAB. NO. 67 = 5
LAB. NO. 71 = 7
LAB. NO. 80 = 9
LAB. NO. 81 = 0
LAB. NO. 82 = :
LAB. NO. 84 = -
LAB. NO. 85 =)
LAB. NO. 86 = (
LAB. NO. 88 = +
LAB. NO. 90 = -
LAB. NO. 91 = _
LAB. NO. 92 = ;
LAB. NO. 93 = *
LAB. NO. 94 = *
LAB. NO. 95 = *
LAB. NO. 7 = G
LAB. NO. 3 = C
LAB. NO. 9 = H
LAB. NO. 10 = I
LAB. NO. 11 = J
LAB. NO. 15 = L
LAB. NO. 18 = N
LAB. NO. 19 = O
LAB. NO. 20 = P
LAB. NO. 21 = Q
LAB. NO. 22 = R

	MATERIAL 1	MATERIAL 2
MEAN	2.126	2.123
MEDIAN	2.135	2.123
STANDARD DEVIATION	0.042	0.038
STANDARD ERROR OF THE MEAN	0.007	0.006

NO OF POINTS IN EACH QUADRANT
NE = 11
SE = 4
NW = 9
SW = 14

TEST 33: OPTIMUM MOISTURE, % (MOISTURE - DENSITY RELATIONSHIP)
SCATTER PLOT ANALYSIS HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.222 UNITS=1 CM VERTICAL AXIS: MATERIAL 2



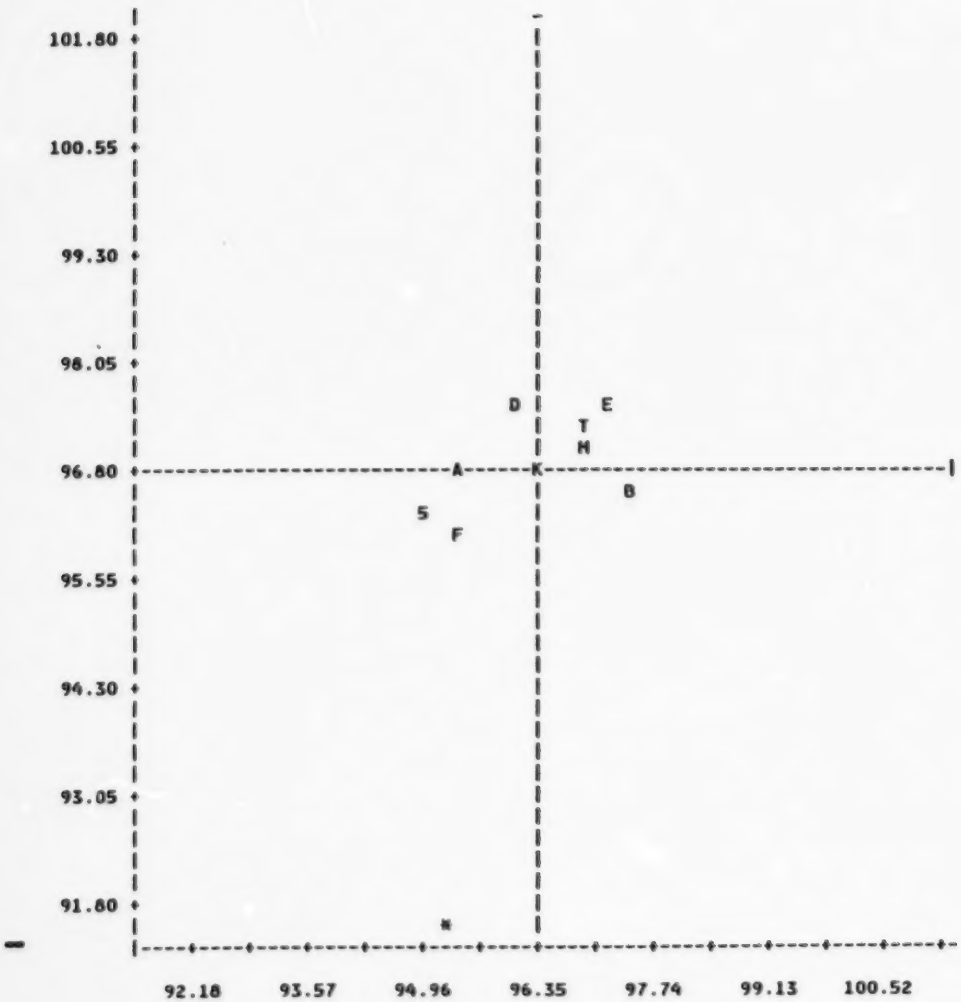
LEGEND
======

LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 27 = T
LAB. NO. 38 = U
LAB. NO. 53 = W
LAB. NO. 60 = Z
LAB. NO. 64 = 3
LAB. NO. 66 = 4
LAB. NO. 67 = 5
LAB. NO. 71 = 7
LAB. NO. 80 = 9
LAB. NO. 81 = 0
LAB. NO. 82 = :
LAB. NO. 84 = -
LAB. NO. 85 =)
LAB. NO. 86 = (
LAB. NO. 88 = +
LAB. NO. 90 = -
LAB. NO. 91 = _
LAB. NO. 92 = ;
LAB. NO. 93 = *
LAB. NO. 94 = *
LAB. NO. 95 = *
LAB. NO. 7 = G
LAB. NO. 3 = C
LAB. NO. 9 = H
LAB. NO. 10 = I
LAB. NO. 11 = J
LAB. NO. 15 = L
LAB. NO. 18 = N
LAB. NO. 19 = O
LAB. NO. 20 = P
LAB. NO. 21 = Q
LAB. NO. 22 = R

	MATERIAL 1	MATERIAL 2
MEAN	8.267	8.356
MEDIAN	8.200	8.300
STANDARD DEVIATION	0.663	0.509
STANDARD ERROR OF THE MEAN	0.106	0.082

NO OF POINTS IN EACH QUADRANT
NE = 13
SE = 6
NW = 7
SW = 12

TEST 40: PERCENT PASSED ON 2.00 MM SIEVE (PARTICLE SIZE ANALYSIS)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.556 UNITS=1 CH — VERTICAL AXIS: MATERIAL 2

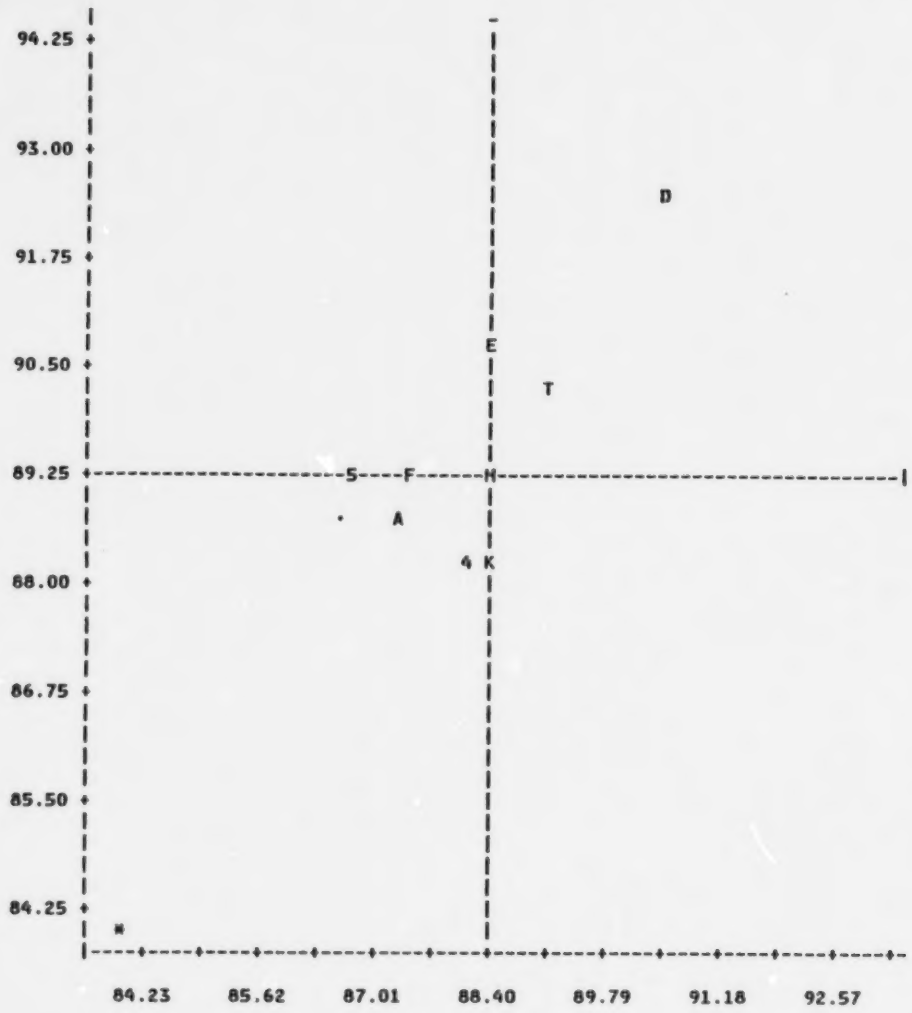


LEGEND
======
LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 27 = T
LAB. NO. 66 = 4
LAB. NO. 67 = 5

	MATERIAL 1	MATERIAL 2
MEAN	96.300	95.670
MEDIAN	96.350	96.800
STANDARD DEVIATION	0.909	0.530
STANDARD ERROR OF THE MEAN	0.288	0.168

NO OF POINTS IN EACH QUADRANT
NE = 3
SE = 1
NW = 3
SW = 2

TEST 41: PERCENT PASSED ON 425 MM SIEVE (PARTICLE SIZE ANALYSIS)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.556 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2

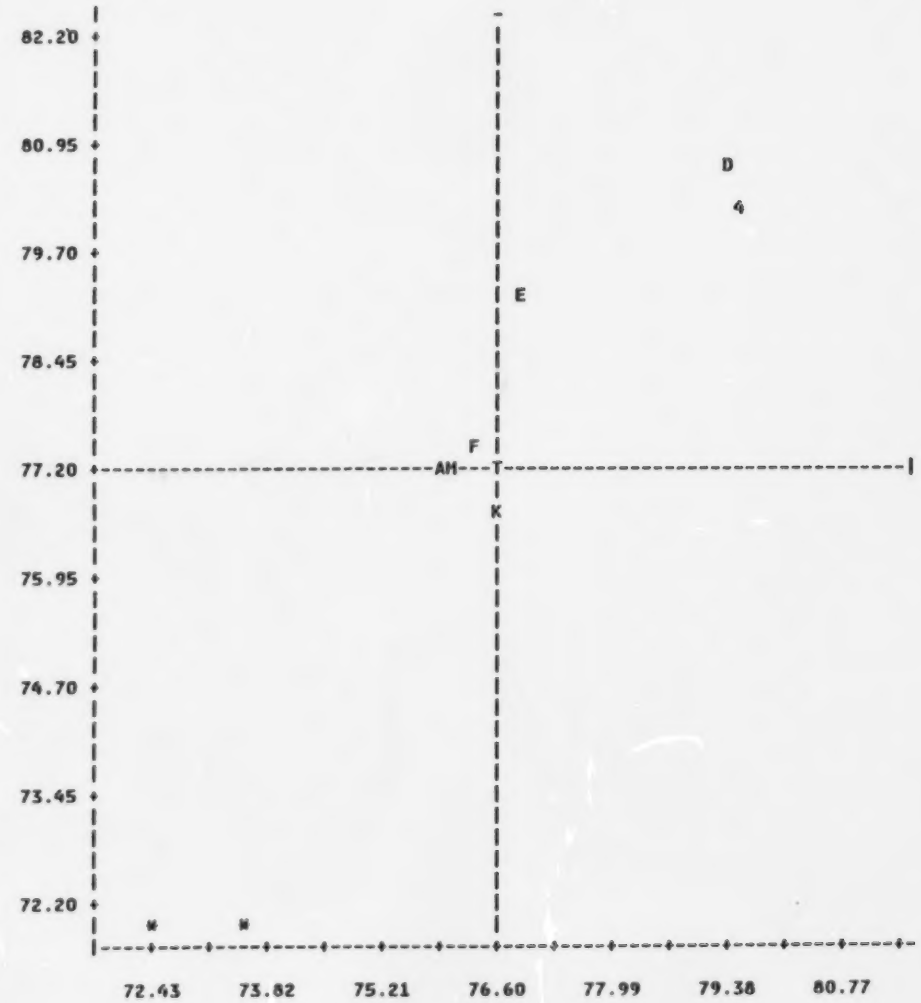


LEGEND
======
LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 27 = T
LAB. NO. 66 = 4
LAB. NO. 67 = 5

	MATERIAL 1	MATERIAL 2
MEAN	87.980	88.610
MEDIAN	88.400	89.250
STANDARD DEVIATION	1.119	1.229
STANDARD ERROR OF THE MEAN	0.354	0.389

NO OF POINTS IN EACH QUADRANT
NE = 2
SE = 0
NW = 4
SW = 3

TEST 42: PERCENT PASSED ON 75 UM SIEVE (PARTICLE SIZE ANALYSIS)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.556 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2

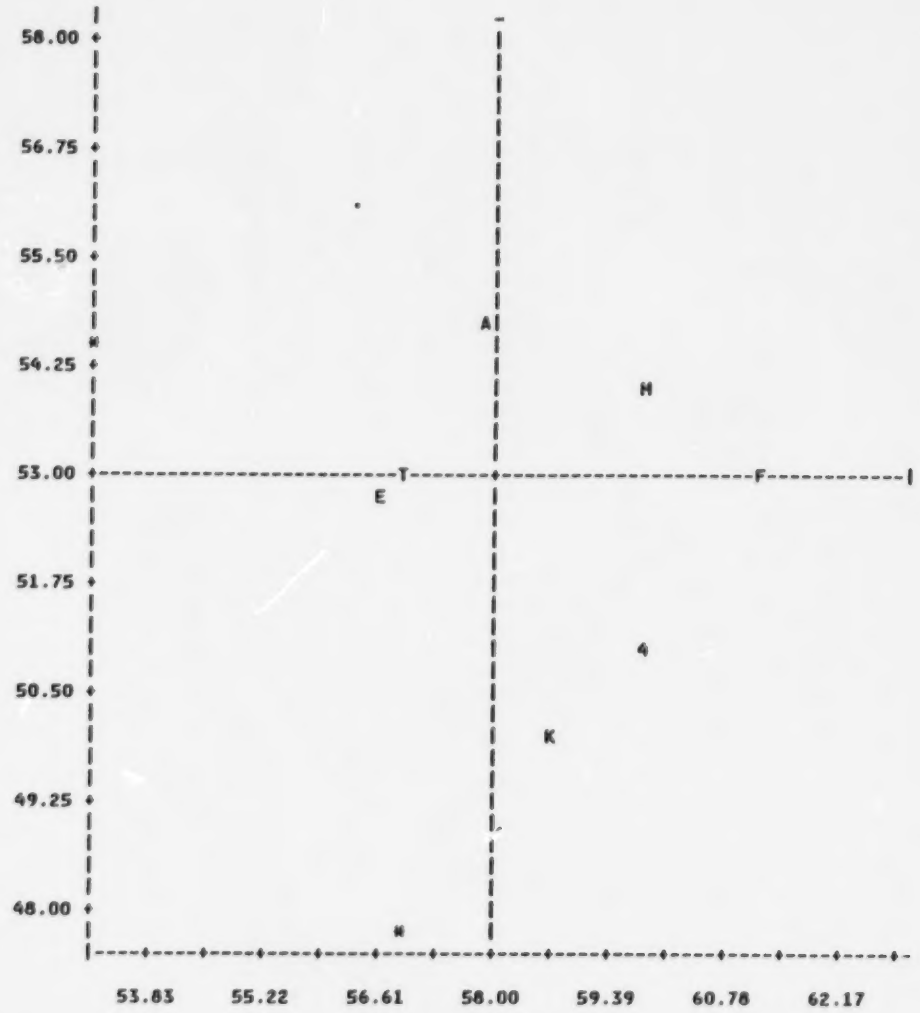


LEGEND
======
LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 27 = T
LAB. NO. 66 = 4
LAB. NO. 67 = 5

	MATERIAL 1	MATERIAL 2
MEAN	76.470	76.690
MEDIAN	76.600	77.200
STANDARD DEVIATION	2.205	3.380
STANDARD ERROR OF THE MEAN	0.697	1.069

NO OF POINTS IN EACH QUADRANT
NE = 3
SE = 0
NW = 4
SW = 1

TEST 43: PERCENT PASSED ON 20 UM SIEVE (PARTICLE SIZE ANALYSIS)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.556 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2

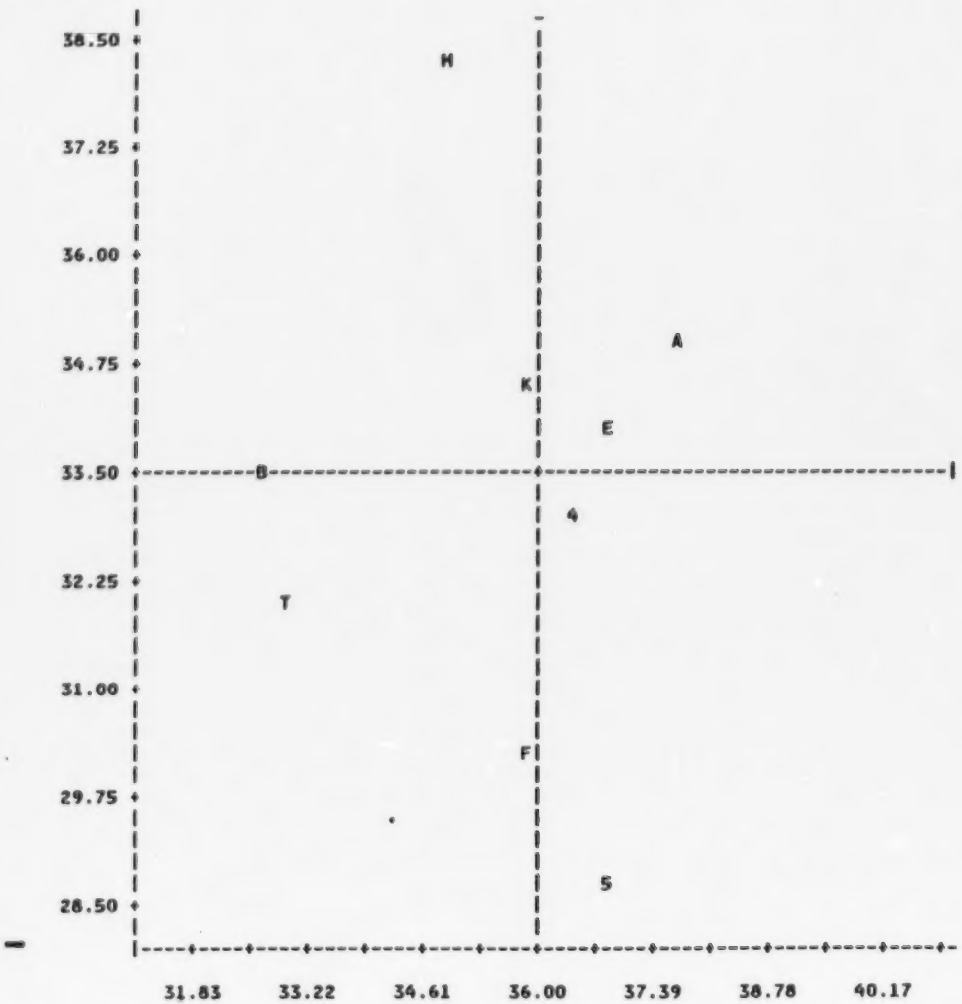


LEGEND
======
LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 27 = T
LAB. NO. 66 = 4
LAB. NO. 67 = 5

	MATERIAL 1	MATERIAL 2
MEAN	57.989	52.344
MEDIAN	58.000	53.000
STANDARD DEVIATION	2.502	2.174
STANDARD ERROR OF THE MEAN	0.834	0.725

NO OF POINTS IN EACH QUADRANT
NE = 2
SE = 2
NW = 2
SW = 1

TEST 44: PERCENT PASSED ON 5 UM SIEVE (PARTICLE SIZE ANALYSIS)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.556 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



LEGEND
======

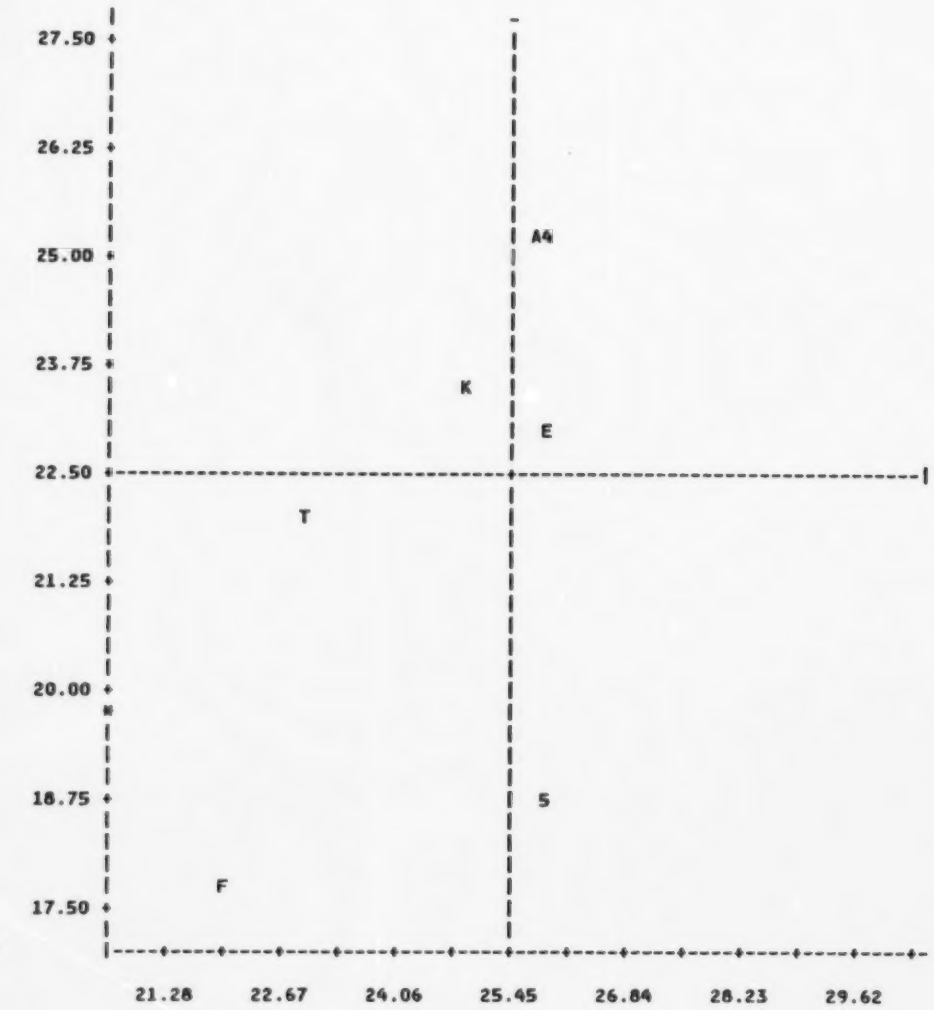
LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = H
LAB. NO. 27 = T
LAB. NO. 66 = 4
LAB. NO. 67 = 5

	MATERIAL 1	MATERIAL 2
MEAN	35.678	33.278
MEDIAN	36.000	33.500
STANDARD DEVIATION	1.796	2.636
STANDARD ERROR OF THE MEAN	0.599	0.879

NO OF POINTS IN EACH QUADRANT
NE = 2
SE = 2
NW = 3
SW = 2

TEST 45: PERCENT PASSED ON 2 UM SIEVE (PARTICLE SIZE ANALYSIS)
SCATTER PLOT ANALYSIS
SCALE: 0.556 UNITS=1 CM

HORIZONTAL AXIS: MATERIAL 1
VERTICAL AXIS: MATERIAL 2



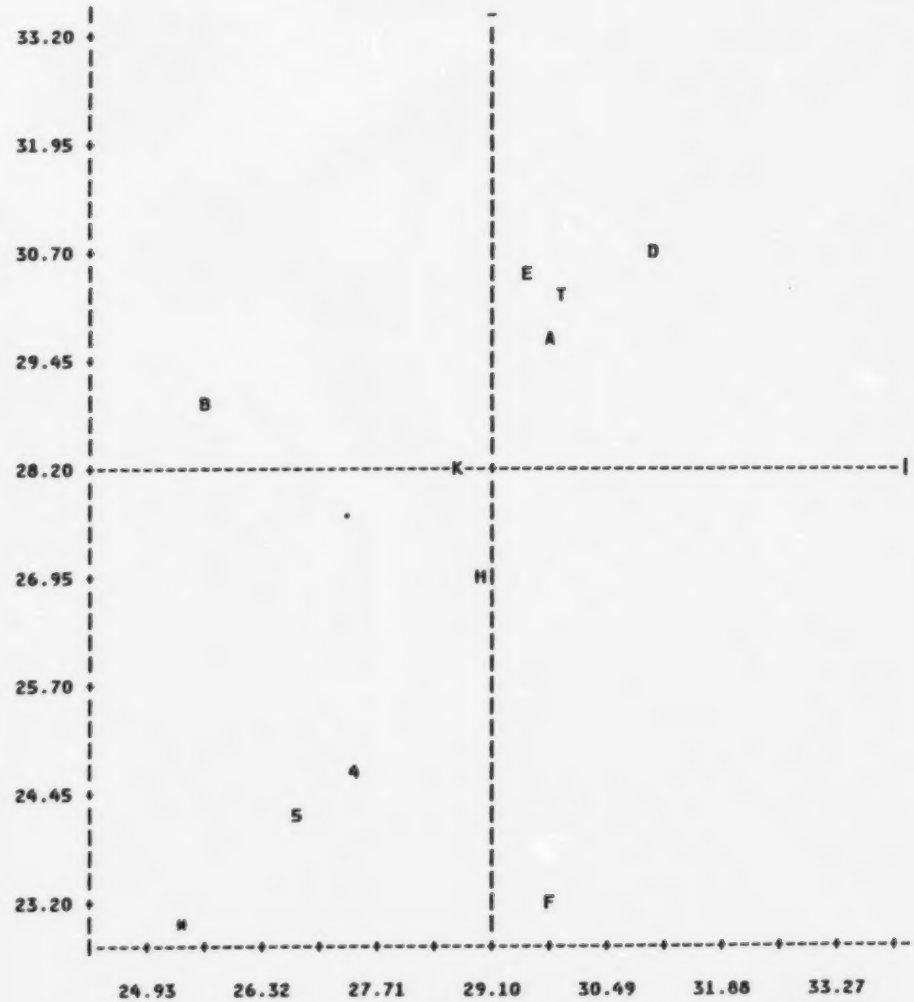
LEGEND
======
LAB. NO. 1 = A
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 27 = T
LAB. NO. 66 = 4
LAB. NO. 67 = 5

	MATERIAL 1	MATERIAL 2
MEAN	23.612	21.938
MEDIAN	25.450	22.500
STANDARD DEVIATION	1.665	2.678
STANDARD ERROR OF THE MEAN	0.589	0.947

NO OF POINTS IN EACH QUADRANT
NE = 3
SE = 1
NW = 1
SW = 2

TEST 46: LIQUID LIMIT, %
SCATTER PLOT ANALYSIS
SCALE: 0.556 UNITS=1 CM

HORIZONTAL AXIS: MATERIAL 1
VERTICAL AXIS: MATERIAL 2



LEGEND
======

LAB. NO. 1	= A
LAB. NO. 2	= B
LAB. NO. 4	= D
LAB. NO. 5	= E
LAB. NO. 6	= F
LAB. NO. 14	= K
LAB. NO. 16	= H
LAB. NO. 27	= T
LAB. NO. 66	= 4
LAB. NO. 67	= 5
LAB. NO. 71	= 7

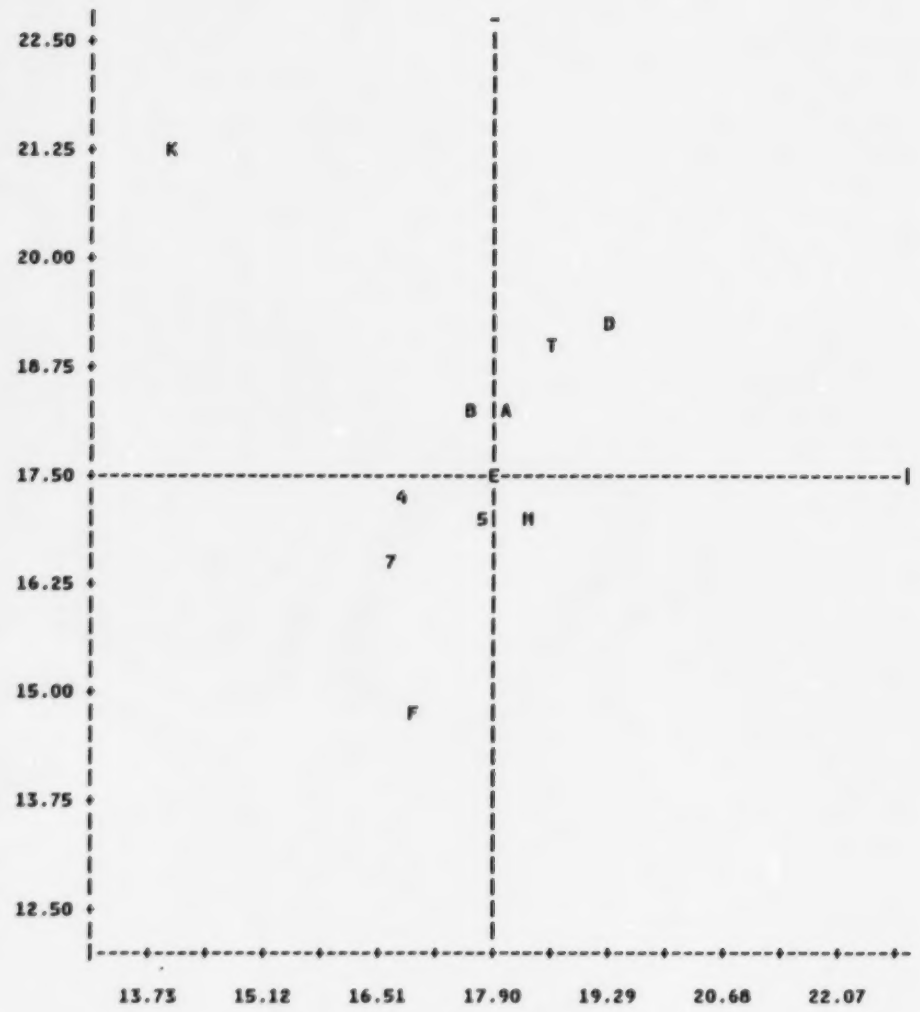
	MATERIAL 1	MATERIAL 2
MEAN	28.582	27.273
MEDIAN	29.100	28.200
STANDARD DEVIATION	1.908	2.951
STANDARD ERROR OF THE MEAN	0.575	0.890

NO OF POINTS IN EACH QUADRANT

NE	= 4
SE	= 1
NW	= 2
SW	= 3

TEST 47: PLASTIC LIMIT, %
SCATTER PLOT ANALYSIS
SCALE: 0.556 UNITS=1 CM

HORIZONTAL AXIS: MATERIAL 1
VERTICAL AXIS: MATERIAL 2



LEGEND
======

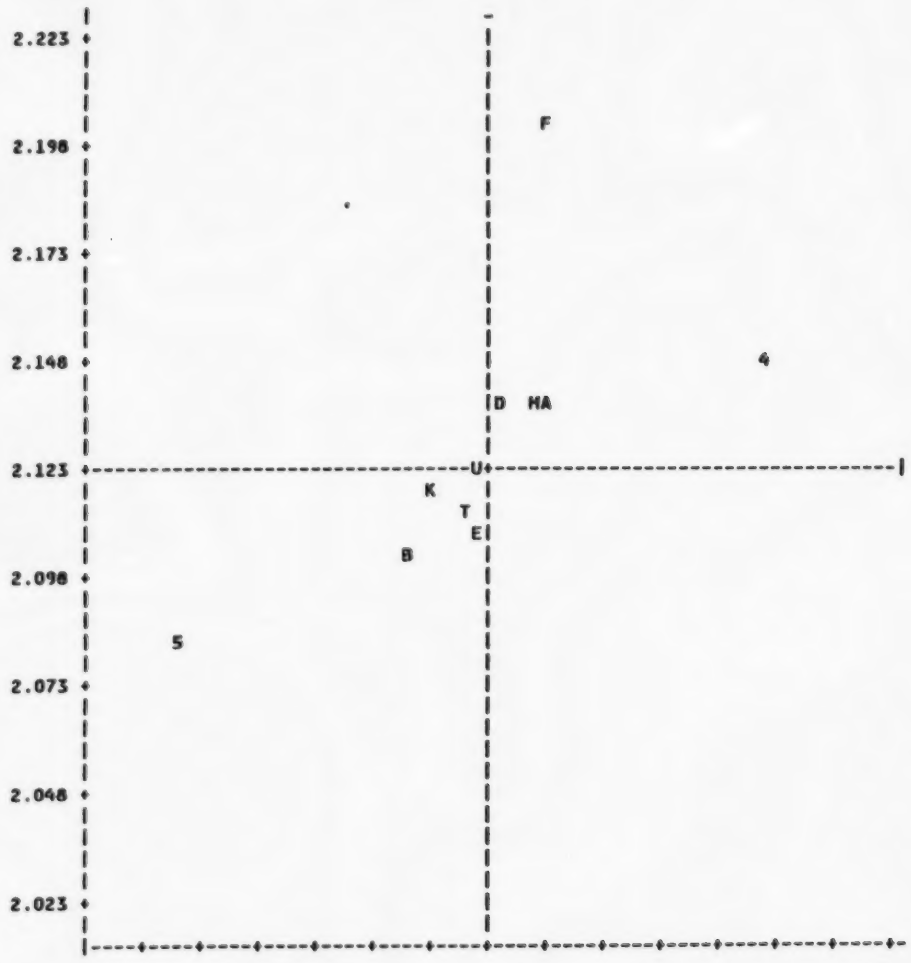
LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 27 = T
LAB. NO. 66 = 4
LAB. NO. 67 = 5
LAB. NO. 71 = 7

	MATERIAL 1	MATERIAL 2
MEAN	17.564	17.782
MEDIAN	17.900	17.500
STANDARD DEVIATION	0.844	1.561
STANDARD ERROR OF THE MEAN	0.254	0.471

NO OF POINTS IN EACH QUADRANT

NE = 3
SE = 1
NW = 3
SW = 4

TEST 50: MAXIMUM WET DENSITY G/CM3 (MOISTURE - DENSITY RELATIONSHIP)
SCATTER PLOT ANALYSIS — HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.011 UNITS=1 CM — VERTICAL AXIS: MATERIAL 2



LEGEND
======

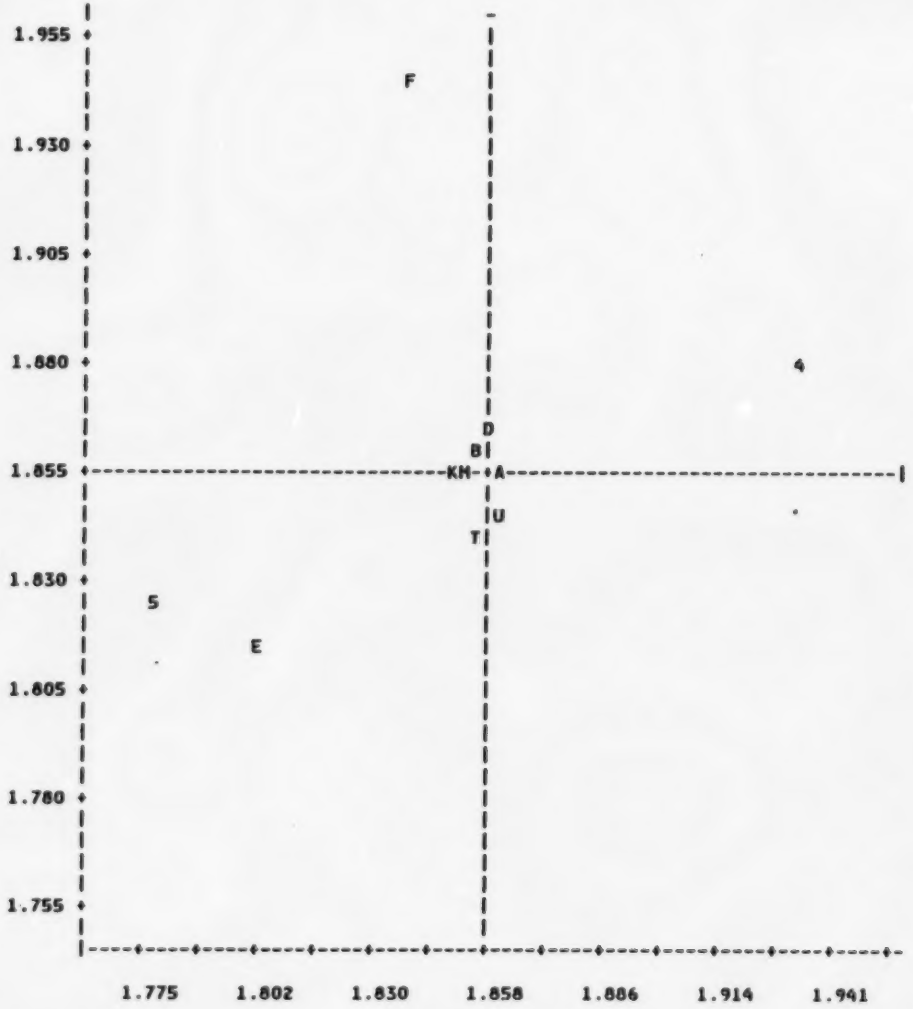
LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = H
LAB. NO. 27 = T
LAB. NO. 38 = U
LAB. NO. 66 = 4
LAB. NO. 67 = 5

	MATERIAL 1	MATERIAL 2
MEAN	2.125	2.128
MEDIAN	2.123	2.123
STANDARD DEVIATION	0.034	0.018
STANDARD ERROR OF THE MEAN	0.010	0.005

NO OF POINTS IN EACH QUADRANT
NE = 5
SE = 0
NW = 1
SW = 5

TEST 51: MAXIMUM DRY DENSITY G/CM3 (MOISTURE - DENSITY RELATIONSHIP)
SCATTER PLOT ANALYSIS
SCALE: 0.011 UNITS=1 CM

HORIZONTAL AXIS: MATERIAL 1
VERTICAL AXIS: MATERIAL 2



LEGEND
======

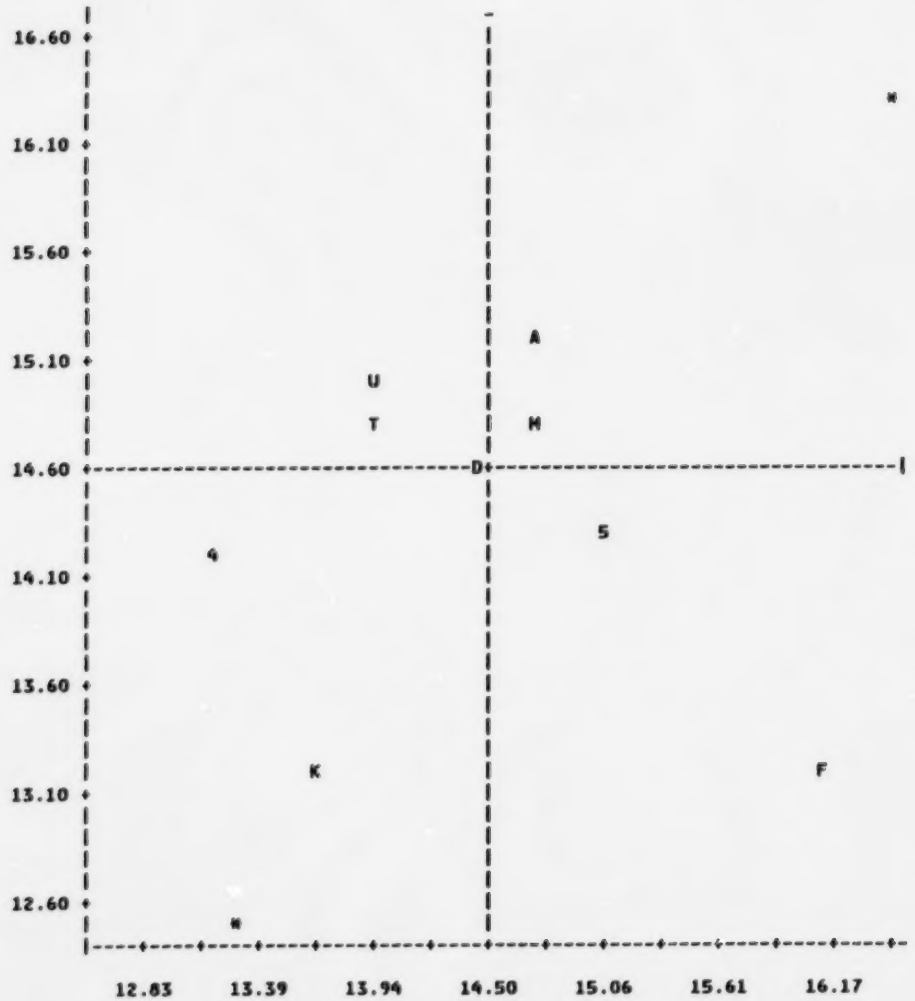
LAB. NO. 1 = A
LAB. NO. 2 = R
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 27 = T
LAB. NO. 38 = U
LAB. NO. 66 = 4
LAB. NO. 67 = 5

	MATERIAL 1	MATERIAL 2
MEAN	1.852	1.858
MEDIAN	1.858	1.855
STANDARD DEVIATION	0.039	0.018
STANDARD ERROR OF THE MEAN	0.012	0.005

NO OF POINTS IN EACH QUADRANT

NE = 2
SE = 1
NW = 5
SW = 3

TEST 52: OPTIMUM MOISTURE, % (MOISTURE - DENSITY RELATIONSHIP)
SCATTER PLOT ANALYSIS HORIZONTAL AXIS: MATERIAL 1
SCALE: 0.222 UNITS=1 CM VERTICAL AXIS: MATERIAL 2



12.83 13.39 13.94 14.50 15.06 15.61 16.17

LEGEND
======
LAB. NO. 1 = A
LAB. NO. 2 = B
LAB. NO. 4 = D
LAB. NO. 5 = E
LAB. NO. 6 = F
LAB. NO. 14 = K
LAB. NO. 16 = M
LAB. NO. 27 = T
LAB. NO. 38 = U
LAB. NO. 66 = 4
LAB. NO. 67 = 5

	MATERIAL 1	MATERIAL 2
MEAN	14.655	14.355
MEDIAN	14.500	14.600
STANDARD DEVIATION	1.306	1.090
STANDARD ERROR OF THE MEAN	0.394	0.329

NO OF POINTS IN EACH QUADRANT
NE = 2
SE = 2
NW = 3
SW = 2